An Address
ON
THE OPERATIVE TREATMENT OF ABSCESS WHEN SITUATED IN THE BRAIN.

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MR. PRESIDENT AND GENTLEMEN,—None of us can have forgotten the beautiful story of "Rab and His Friends"[1] wherein is painted by a master hand an operation by your great surgeon, Syme, in the pre-chloroform and pre-antiseptic days. The heartrending description of the operation would be true to this day but for the genius of Simpson, as chloroform—"one of God's best gifts to His suffering children"—might still be unknown. And the "Reaper whose name is Death"[2] would still be reaping the "bearded grain" by means of the bacillary "sickle keen"—the dread and fatal septic illness that cut off the life of Allie—had not Lister, the peerless knight of surgery, after long years of toil, vanquished the terror of the surgeon. Truly—

> "We hold him for another Herakles[3]
> Battling with custom, prejudice, disease,
> As once the Son of Zeus with Death and Hell."

Indeed, we may detach some words from a sublime passage in which Macaulay immortalises the genius of an illustrious statesman and say of Lister: "History will deliberately pronounce that among eminent men no one has left a more stainless and none a more splendid name."[4]

In the city where these greatest benefactors of humanity lived and taught it is indeed a high honour to have been called upon to open a scientific discussion. I did not know until I received the agenda paper that the subject intrusted to me was to occupy the whole time of the meeting. On looking over my paper on the journey north I could not help being struck with the contrast between even a practical paper and the triumphant achievements of the Edinburgh school. The exclamation of Tony Lumpkin when Diggory handed him a letter came to my mind:—

> "A damned cramp piece of penmanship as ever I saw in my life."[5]

The greatest trust between man and man, writes Lord Bacon in his essay on Counsel, is the trust of giving counsel. We have it on the authority of his greater contemporary that

> "Some men have greatness thrust upon them."[6]

This is my fate, for to offer counsel on the subject of the treatment of abscess of the brain presents transcendant difficulty, and to be requested so to do implies a trust in my ability which I am only too conscious will fall short of the standard set before me. In fact, not to put too fine a point upon it, I somewhat fear my fate may be comparable to that of Metis[7] whose name, Bacon tells us, signifies counsel. It was her fate to be married to Jupiter who, as soon as she conceived, ate her up lest he might be deprived of any of her counsel. I do not imagine that the members present will appraise my counsel so highly that they will be anxious to follow the lead of Jupiter, but should that consummation happen it is my fervent prayer that they may partake of a spiritual rather than of a corporeal feast. Macbeth tells us—

> "The time has been
> That when the brains were out the man would die
> And there an end."[8]

Though this dire calamity frequently dogs our footsteps, yet the times have changed, for now the society's "great consult begins,"[9] not, as in Milton's Stygian Council, held at Pandemonium, by the passing of "resolutions in despair,"[10] but having gained "reinforcement of hope"[11] from past success we—

> "..... meanwhile revive,
> Abandon fear, to strength and counsel joined
> Think nothing hard, much less to be despaired."[12]

"Things unattempted yet" the advance of knowledge will make possible, the tide of Truth is ever flowing,

> "For while the tired waves, vainly breaking,
> Seem here no painful inch to gain,
> Far back, thro' creeks and inlets making,
> Comes silent, flooding in, the main."[13]

So it has been in the advance of surgery. Only by slow degrees has problem after problem been grappled with and solved. One of the latest triumphs of the art of the chirurgeon is shown in the operative treatment of abscess of the brain. In a steadily increasing number of instances it can truly be said of the surgeon:—

> "..... strangely visited people
> All swoln and ulcerous, pitiful [in the brains],
> The mere despair of surgery, he cures."[14]

Although in the surgical treatment of disease of the brain we are as yet only on the threshold of success, nevertheless the near approach of a perfect understanding of these matters may be confidently predicted. Then will it be possible to enter into the thought of the Roman poet:—

> "No pleasure is comparable to the standing upon the vantage ground of truth [a hill not to be commanded and where the air is always clear and serene] and to see the errors, and wanderings, and mists, and tempests in the vale below."[15]

"The more I think of it," says Ruskin, "I find this conclusion more impressed upon me—that the greatest thing a human soul ever does in this world is to *see* something and tell what it *saw* in a *plain* way." In this paper an attempt is made to tell in a *plain* way a few of the things which I see with regard to abscess of the brain. "Whether these seeings are there at all is another matter." The object in view is to induce my colleagues and fellow workers to tell also what they have seen. "The practical bearings of our theme" are of incalculable interest to science and to man. Correct observation is the vital "thread which binds the facts" and widens the field of knowledge.

GENERAL CONSIDERATIONS.

Before describing the exact details which must be carried out in the operative treatment of abscess of the brain certain general considerations demand attention. An abscess of the brain is situated in a tissue of "liquid texture."[16] This tissue, containing little less water than the blood and inclosed in an inextensile bony capsule, is subject to the laws of hydrostatics. The integrity of certain parts of it is essential to the continuance of life. Placed within the cranium the abscess is, until exposed by operation, quite beyond the reach of physical examination. Important facts, therefore, readily ascertainable by this method with reference to an abscess in an accessible situation are not at the command of the surgeon when he has to operate for the relief of brain abscess. Despite the dictum of the poet that—

> "'Tis the blot upon the brain
> That will show itself without,"[17]

the objective and subjective symptoms upon which the diagnosis is made point to a lesion of the cerebral substance but do not indicate clearly its nature and extent. The surgeon has to operate without any certain knowledge as to the size of the abscess and the acuteness of the inflammation, nor can he often truly surmise whether he has to deal with circumscribed or diffuse suppuration or both. Even when the history seems to point clearly to an acute condition it may be found that the abscess is of old standing. Abscess in the brain may be latent, producing only general symptoms of ill health, until excited to renewed activity by a febrile attack by a blow on the head or by some minor operation, such as the removal of a polypus. By a latent

[1] By John Brown, M.D.
[2] Longfellow: "The Reaper and the Flowers."
[3] W. E. Henley: A Book of Verses, "The Chief."
[4] Essay on the Earl of Chatham.
[5] Goldsmith: "She Stoops to Conquer," Act IV., line 388.
[6] Twelfth Night, Act III., Scene 4, line 43.
[7] Essay on Counsel.
[8] Act III., Scene 4, line 79.
[9] Paradise Lost, Book I., line 796.
[10] Ibid., Book I., line 190.
[11] Ibid., Book VI., line 493.
[12] Ibid., Book I., line 16.
[13] Poem by A. H. Clough, "Say Not the Struggle Nought Availeth."
[14] Macbeth, Act IV., Scene 3, line 150.
[15] Lucretius: see Bacon's Essay on Truth.
[16] Paradise Lost, Book VI., line 348.
[17] Tennyson's "Maud," Part II., iv. 8.

brain abscess, then, is meant one producing no symptoms directly referable to a lesion of the brain. Such an abscess is, in all parts of the body, inclosed in a capsule. An abscess producing slight symptoms over a considerable period of time may not be encapsuled. This is true of the brain as of the neck or any other region. This variety of abscess has a tendency to extend, causing local destruction of tissue. A history of long-continued cerebral symptoms does not necessarily point to the presence of a capsule around the area of suppuration, for in a case of cerebellar abscess with symptoms dating back at least eight months no capsule was found, but the whole cerebellar hemisphere was nothing but a shell of softened grey matter.[18] The two conditions of acute abscess and old encapsuled abscess may exist together, as in a case that occurred to one of my colleagues, now deceased, in which an acute cerebellar abscess was opened with relief to the symptoms, but at the necropsy an old encapsuled abscess was found internal to that which had been opened.[19] I have elsewhere drawn attention to several such instances.

The question must now be asked, How is an abscess of the brain to be treated? There can be no discussion as to the nature of the reply. Stücke[20] says: "Otology is an offshoot of surgery and only in close adherence to it and in the true and conscientious observance of its principles is success to be sought for and to be found. The most important principle is the care for free unhindered spontaneous drainage." These significant words were written in reference to the treatment of middle-ear suppuration and they apply with equal force to the treatment of abscess of the brain, which is the only too frequent result of failure to comply with them. Success can only be won by close attention to those fundamental surgical principles which guide us in the treatment of abscess elsewhere. In one of the most recent text-books on surgery[21] we find these principles thus tersely stated: "In the treatment of an abscess there is one absolute rule which knows no exception—viz., that whenever and wherever pus is found the abscess should be evacuated at once, and after evacuating it thorough drainage must be provided for." To which may be added that when a purulent collection is encapsuled enucleation is the proper treatment. In the great majority of abscesses in the brain, as elsewhere, there is no capsule. The following is, however, an instance in which a capsule one-eighth of an inch thick was present, but owing to a mistake in diagnosis the abscess was not removed.

A man, aged 40 years, was admitted to hospital on Sept. 14th, 1895, with severe occipital pain, vomiting, and slow cerebration. He had paralysis of the right sixth nerve and double optic neuritis. He lay on his right side in bed. There were forced movements to the right and rotation to the right in walking. With the eyes shut he fell backwards and to the right. In the beginning of May in the same year he had a severe illness with shivering, sweating, and rigor, said to have been of influenzal origin. This had been followed by slight loss of power on the left side from which he had recovered. About 10 days before admission the headache and other symptoms returned. On the day following admission (Sept. 15th) a rigor occurred at 5.30 P.M.; at 6.30 coma was complete; at 7.30 artificial respiration was necessary and was continued until I arrived. I was told that the case was thought by the physician to be one of cerebellar tumour. Considering it almost impracticable to remove a cerebellar tumour during the performance of artificial respiration, and thinking that the left-sided paresis might be due to involvement of the right cerebral hemisphere, I removed a large area of bone over the right motor cortex. The brain bulged under great pressure, but natural respiration did not return. A trocar and cannula were plunged in up to the hilt and impinged upon a hard mass into which it would not penetrate. As this was thought to be a solid basal tumour which could not be removed the operation was abandoned. The necropsy revealed an encapsuled abscess containing an ounce of thick greenish pus, replacing the right optic thalamus. The capsule was very firm and quite one-eighth of an inch thick. This abscess might have been enucleated had it been recognised.

When there is no capsule the treatment is free incision and drainage, but the provision of drainage is more difficult in the brain than in other more solid tissues where, by free incision and counter-opening, it is easy to establish drainage and effect a cure. The difficulty is that in the "liquid texture" of the brain as soon as the abscess is opened the intracranial pressure causes the fluid brain substance surrounding the abscess to flow towards the surface, so that a large portion of the cavity of an unencapsuled abscess is at once shut off from communication with the incision.

Since micro-organisms behave in the brain as they do elsewhere in the body the question naturally arises, should the bacteriology of the abscess modify the treatment? It has been already pointed out that until the brain has been entered it cannot be discovered whether the abscess is localised or is spreading. The virulence of manifest suppuration presents clinical features which indicate its bacteriology to the mind of the surgeon who has had some training in that subject. These clinical signs cannot be observed in the case of brain abscess, but it is nevertheless supremely important to determine the nature of the micro-organism at the earliest possible moment, as the use of a suitable antitoxin may prove to be a valuable weapon in the fight against death.

DETAILS OF OPERATION.

We now proceed to consider step by step how the surgical principles of the treatment of abscess are to be carried out in the case of the brain. It is taken for granted that the local source of infection has been thoroughly removed. The abscess must now be exposed by an appropriate operation the steps of which are the following.

1. *Sterilisation of the skin.*—Shave the scalp, scrub it with ethereal soap and sterilised water, wash the soap away with sterilised water, rub firmly with turpentine on a sterile swab and then again with ether. If the operation is not to be done immediately apply sterilised lint soaked in a glycerine solution of perchloride of mercury (1 in 1000). If the operation is proceeded with at once swab the skin with strong carbolic or perchloride lotion.

2. *Anæsthesia*—The anæsthetic should be chloroform and it should be given warily, for, especially in cases of cerebellar abscess, respiration is apt to cease. On two occasions it has happened in my experience that with the first few inhalations of chloroform respiration ceased and the operation had to be completed during the performance of artificial respiration. Neither morphia nor strychnia should be administered before the dura has been opened.

3. *Incision of the scalp*—A flap is to be preferred to a crucial incision. It should be cut with its base downwards and should be considerably larger than the opening designed to be made in the skull.

4. *Opening in the bone.*—I am convinced that failure may result from neglect of the rule of surgery to make a free opening. How can a free opening into the abscess be effected through an inadequate opening in the bone?

> "Wounds by wider wounds are healed,
> And poisons by themselves expelled."[22]

The trephine employed should be five-eighths of an inch in diameter, of slightly conical shape, and should have the teeth outside. (*a*) In temporo-sphenoidal abscess the site of application should be about seven-eighths of an inch above the supra-meatal spine, the object being to expose the lowest part of the middle fossa just external to the tegmen antri and tegmen tympani. Immediately above these tegmina are the tissues in which, as a rule, the infective process first develops. When the disc of bone has been removed by the trephine more bone should be cut away with small saws, forceps, or Cryer's drill until the opening in the skull is enlarged to a parallelogram measuring one and three-quarter inches antero-posteriorly and one inch vertically. The lower edge of the parallelogram is marked by that of the trephine opening. Three-quarters of an inch of its antero-posterior extent should lie behind the centre of this aperture and one inch in front. The lowest part of any abscess in the temporo-sphenoidal lobe can be efficiently drained through this opening, and the bone disease which is the source of infection can be directly observed and removed. I have known a case where a temporo-sphenoidal abscess was opened at its highest part and where life was only saved by making a counter-opening in the situation here recommended, the man having been for some weeks in a condition of cerebral irritation. If the abscess is above and behind or above and in front of the opening more bone should be taken away, so as completely to

[18] Allbutt's System of Medicine, vol. vii., p. 560.
[19] St. Thomas's Hospital Reports, vol. xxiii., p. 208.
[20] Berliner Klinische Wochenschrift, 1899.
[21] Da Costa: Modern Surgery.
[22] Butler: Hudibras.

expose the surface of brain which is external to it, or if the surgeon so prefer he can make a trephine opening higher up and utilise the lower aperture as a counter-opening. The former method is recommended. (*b*) In operating for cerebellar abscess the same trephine should be used. It should be placed on the bone so that its anterior edge touches the posterior border of the mastoid process. Its upper edge should be just below Reid's base line. In this way the horizontal and vertical portions of the sigmoid sinus are avoided. The opening should be enlarged backwards and downwards until it is quite one and a quarter inches in antero-posterior, and one inch in vertical, extent. The opening may require enlargement, especially in cases where the abscess extends into the posterior part of the lateral lobe. It cannot be carried forwards with much advantage as the vertical portion of the sinus is in the way of incision of the dura in this direction. It is to be especially remembered that the removal of bone while comparatively easy before incision of the dura mater is not so satisfactorily accomplished when that membrane has been incised and the brain is bulging under pressure.

5. *Incision of the dura mater.*—Here, again, a flap is preferable to a crucial incision. A small aperture should be made with a knife and the flap (having its base upwards)[23] should then be cut with fine blunt-pointed scissors. Great care must be taken to avoid wounding the vessels of the cortex which are forced by the intracranial pressure into close contact with the membrane.

6. *Discovery and incision of the abscess.*—When there is a sufficient opening in the bone it may be possible to determine by palpation that the abscess is immediately sub-cortical. An incision should at once be made through the intervening portion of brain substance into the abscess cavity, care being taken to avoid wounding the vessels as in other parts of the body. The use of a trocar and cannula, a pus-seeker, or other special instrument is unnecessary and contrary to surgical principles. If the site of abscess is not obvious it must be sought for by exploratory puncture, and in so doing it should be remembered that the site of the abscess is almost certainly close to the bone disease which gave rise to it. The best instrument to use is a sharp-pointed, long, and narrow knife. Our brains are not like Satan's—

> "Entrails, heart or head, liver or reins,"[24]

which Milton tells us could

> "Not in their liquid texture mortal wound
> Receive, no more than can the fluid air";

and a wound made by the surgeon's knife will not heal quite so readily as that inflicted by the sword of Michael; yet in the brain, as elsewhere, clean-cut wounds heal more readily than any others, and there is certainly less risk of the abscess being missed when search is made for it with a sharp knife than when any other instrument is employed. Cases could be related of (1) trocar and cannula missing the abscess; of (2) trocar and cannula passing through the abscess without tapping it; and of (3) trocar and cannula striking the abscess but failing to penetrate its capsule (as in one case already related). The following is an instance of trocar and cannula failing to evacuate a large abscess. The brain was explored in various directions with a trocar and cannula with a negative result. At the necropsy there was found a large abscess with very thick walls containing over four ounces of green offensive pus. So thick was the wall that the abscess shelled out whole and could be rolled about the table. In fact, it needed a sharp plunge with the knife to open it.[25] The use of the knife for the evacuation of an abscess of the brain is not a new operation, but was taught and practised more than a century ago. Dupuytren[26] in one of his lectures says: "In certain cases of deeply-seated fluid collections we must incise the dura mater, the arachnoid, the brain itself if the focus is at the surface of this organ, and by this bold proceeding patients have been saved." A little further on in the same lecture he continues: "Relying also on the success of J. L. Petit, Boyer concurs in the advice of Quesnay and does not fear to plunge the bistoury quite deeply (*assez profondément*) into the very substance of the brain in order to evacuate traumatic effusions which may have formed there, and it has fallen to my lot to do so several times with success." Like many another step in the advance of knowledge this advice, though justified by some brilliant successes, remained for a considerable time a dead letter, for we find a great English surgeon writing nearly half a century later: "There are few surgeons who would have the hardihood of Dupuytren, who plunged a bistoury into the substance of the brain and thus luckily relieved the patient of an abscess in this situation."[27] And after yet another decade the famous case of Dupuytren is thus alluded to in a later edition of the same work: "This was doubtless a somewhat rash thing to do without previously ascertaining the presence of pus by milder means."[28] Dupuytren, in his account of this historical case, says simply: "I incised the dura mater, nothing came out; I thrust a bistoury cautiously" (? so as to avoid the vessels of the cortex) "into the brain and there welled up immediately a flood of pus. That very night all the symptoms disappeared and the patient recovered."[29] If careful exploratory puncture with the knife fail to find the abscess the finger inserted into the brain substance will almost infallibly detect the presence of a tense abnormal swelling. Mistakes, however, may still be made, as is illustrated by two cases related in my article on "Certain Affections of the Ear" in Clifford Allbutt's "System of Medicine." In one of these one cerebellar abscess and in the other two had been opened, yet both patients died from an unopened abscess, oyster-like in shape, lying immediately beneath the cortex of the upper surface of the cerebellar hemisphere. The examining finger felt the sensation of resistance, but this was attributed to the tentorium.

7. *The further treatment of the abscess.*—When the cavity is not entirely closed by the walls of brain substance it may be gently irrigated with a weak antiseptic; but on no account should this be done unless two drainage-tubes are so arranged as to insure the free escape of the fluid. Sterilised normal saline solution is recommended. Unless the opening in the cortex is large I am opposed to the tamponing or packing of the cavity with gauze because the tampon tends to obstruct the free exit of septic material. In one case of abscess of the tempero-sphenoidal lobe in which I removed a large area of bone I ligatured and removed the cortex corresponding to the outer boundary of the abscess. The inner wall of the abscess which was at first treated by gauze plugging soon came to form part of the outer surface of the brain and was thus directly accessible for dressing. The best results ensued.

As to drainage-tubes, the rules for their use in abscess of the brain do not differ in any way from those which apply to their employment in the healing of suppurating areas elsewhere. When a tube has been successfully introduced it should not be disturbed for some time. The most successful cases treated in this way are those in which the tube remains undisturbed for many days. Tubes are shortened or removed only as the cavity heals from the bottom. The nature of the tube is of little consequence. All tubes are liable to become blocked with brain débris.

In the case of a small abscess deeply placed in the anterior and inner portion of the cerebellar hemisphere the surgeon may be unwilling to use the knife for evacuation. Recourse must then be had to the exploring trocar and cannula, the latter having rings of wire attached by which, when it has penetrated the abscess, it may be immediately fixed to the scalp by silkworm gut. Many a case has been lost after the pus has been evacuated owing to failure to re-introduce the tube in the proper position. The trocar and cannula should be of platinised silver. In the event of a counter-opening being made or of drainage occurring through the external auditory meatus gentle irrigation through the diseased area of brain is beneficial, just as it is in cases of abscess with a counter-opening elsewhere.

8. *Closure of the wound and dressing.*—An aperture is now made in the base of the flap of the size of the opening in the brain, and the edge of the flap is replaced in position and sutured with fine silkworm gut. A powder may be used for dusting around the wound but it should be sterilised. The dressing may be of sterilised cyanide gauze, either used dry or wrung out of carbolic lotion (1 in 40). A dry sterilised cyanide dressing is recommended and the bandage should, if possible, be so managed as not to cover the forehead.

9. *After-treatment.*—This is a matter demanding the close

[23] Suggested to me by Dr. C. D. Green.
[24] "Paradise Lost, Book VI., line 346.
[25] Abbott: St. Thomas's Hospital Reports, vol. xxv., p. 205.
[26] Leçons Orales, second edition, vol. vi., pp. 183-4 (published 1839, date of lecture not given).
[27] Erichsen's Surgery, seventh edition, 1877, vol. i., p. 532.
[28] Ibid., ninth edition, 1888, vol. i., p. 781.
[29] Leçons Orales, Ibid., p. 146.

personal attention of the operator. The dressing may require to be changed daily or not at all, according to the nature of the disease and the condition of the wound. (1) The primæ viæ should be kept open by the administration of some preparation of mercury. I have found, too, in septic cases that the pill of colocynth and hyoscyamus is very efficient in clearing the intestine of foul-smelling fæces. (2) In regard to food it may be noted that barley-water and beef tea are often borne by the stomach when milk is rejected. (3) As to alcohol, in certain cases we can hardly do without it. When it must be given I personally prefer to order old brandy, though in this city old Scotch whisky would, no doubt, be selected. Far be it from me to assent to the "startling question" of the gifted Calverley[30] that both the ancient Greeks and the Scotch ought to have invented and adhered to another beverage.

> "The Greek mind must have had some vital fault,
> That they should stick to liquors so injurious—
> (Wine, water, tempered p'raps with Attic salt)—
> And not at once invent that mild, luxurious,
> And artful beverage, Beer." .....
> Then nectar—was that beer, or whisky-toddy?
> Some say the Gaelic mixture, *I* the Saxon:
> I think a strict adherence to the latter
> Might make some Scots less pigheaded, and fatter."

(4) Hernia cerebri is an evidence of sepsis. It is best treated by sterilised antiseptic dressings. To prevent the dressing from adhering to the hernia some form of protective should be used—perhaps gold leaf is the best; slight elastic pressure is useful in the later stages of the treatment.

10. *Recurrence of symptoms.*—It is by no means uncommon to have a return of symptoms a few days after the evacuation of the abscess, due either to the refilling of the abscess cavity from faulty drainage or to the formation of a new abscess in another part of the same lobe. In the cerebellum it is by no means infrequent to have a second or even a third abscess. Instead of concentrating the attention on the original site of abscess the new symptoms, such as high temperature, rapid irregular pulse, screaming fits, retraction of head, general twitchings, vomiting, drowsiness, &c., may suggest conditions such as meningitis or acute distension of the ventricles which are not present. The surgeon being led astray by these speculations may fail to act wisely. We may perhaps apply the words of Goethe[31]:—

> "I tell you what; your speculative wretch
> Is like a beast upon a barren waste,
> Round ever round by an evil spirit chased,
> Whilst all about him fair green pastures stretch.

Your great countryman, Carlyle, has said: "Genius is the transcendent capacity for taking trouble first of all." And Joubert has written: "Genius begins great works, labour alone finishes them." Both of these maxims are eminently true of the treatment of abscess of the brain. In order to succeed the surgeon must "take trouble first of all" in weighing well every point in the history and symptoms of the case and in planning and executing the operation with minute attention to every detail. And in order to finish his "great work" he must spare neither labour nor time in watching the progress of the case and in personally carrying out all the minutiæ of the after-treatment. Many are the vicissitudes of the days and weeks that follow the operation. To be able to choose with certainty and to carry out with precision the various measures which make for success and oppose a disastrous termination the surgeon must have at his command an exact knowledge of the significance of the various symptoms that arise and of the resources and methods available for their systematic treatment. The surgeon cannot here delegate his duties or shift his responsibility, and amid the difficulties that beset him in combating the disease he may well utter the prayer which the veterans of Frederick the Great sang as they marched to meet the foe at the battle of Leuthen—

> "Grant that with zeal and skill this day I do
> What me to do behoves, what Thou command'st me to
> Grant that I do it sharp, at point of moment fit,
> And when I do it grant me good success in it."[32]

And when the case has been brought safely through all difficulties and dangers into the smooth water of convalescence we may well say of the surgeon who saves his patient as Bunyan[33] did of his victorious pilgrim:—

> "Hob-goblin nor foul fiend
> Can daunt his spirit;
> He knows he at the end
> Shall life inherit!
> Then fancies fly away,
> He'll fear not what men say;
> He'll labour night and day"
> [To save his patient].

In conclusion, allow me to say how well I know the toughness of the problem which the surgeon has to face in coming to a decision to operate in certain cases suspected of harbouring an abscess of the brain. The advice given to Richard Plantagenet is much to the point:—

> "But yet be wary in thy studious care."[34]

Delay as the result of consultation may be disastrous, "for occasion turneth a bald noddle after she hath presented her locks in front and no hold taken";[35] and "the ripeness or unripeness of the occasion must ever be well weighed."[36] On the one hand, boldness alone is "ill in counsel, good in execution"[37]; on the other hand, "it is a dangerous thing to trace the thread of knowledge a little way and fancy we have found the end."[38] What is required in consultation is knowledge, experience, a grave sense of responsibility, and the strength to accept the consequences arising therefrom; indeed, to fulfil the Pauline exhortation, "Be strong—quit yourselves like men."[39] When the decision to operate is made it should be acted upon at once; hesitation or delay may be fatal. A patient suffering from cerebellar abscess has died in the night, the operation having been arranged for the following day—"True despatch is a rich thing." "Yet and but,"[40] said the Templar in "The Talisman," "are words for fools; wise men neither hesitate nor retract, they resolve and they execute."[41]

But still, in spite of all our care and pains, success may be wooed in vain. There may be no abscess or, if present, it may not be found.

> "The best laid schemes o' mice an' men
> Gang aft agley,
> An' lea'e us nought but grief an' pain
> For promis'd joy."[42]

"The smallest actual good," says Macaulay, "is better than the most magnificent promises of impossibilities"; and the stay of the surgeon in the midst of depression, discouragement, and defeat is the consciousness that he has "faithfully rendered an unrewarded obedience to the command"[43] of the Preacher.[44]

> "The man who though his fights be all defeats
> Still fights
> Enters at last
> The heavenly Jerusalem's rejoicing streets."[45]
>
> "In earthly races
> To victors only do the heralds call;
> But, oh! in yonder high and heavenly places
> Success is nothing and the work is all."[46]

Yet, kindled by the past the surgeon may surely say, "I shall arrive ..... the succession cannot break. The further evolution must go on the Higher Kingdom come; first the blade where we are to-day; then the ear where we shall be to-morrow; then the full corn in the ear which awaits our children's children and which we live to hasten."[47]

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[30] Verses and Translations. "Beer," by C.S.C.
[31] Faust, Act II., Scene 4 (Sir T. Martin's Translation).
[32] Carlyle's translation, See History of Frederick the Great, Book xviii., Chapter x.
[33] The Pilgrim's Progress, Part II.
[34] Henry VI., Part I., Act. II., Scene 6, line 37.
[35] Bacon's Essays, "Of Delays." [36] Ibid.
[37] Bacon's Essays, "Of Boldness."
[38] A. W. Holmes-Forbes: The Science of Beauty, p. 195.
[39] 1 Cor. xvi. 13; 1 Sam. iv. 9.
[40] Bacon's Essay, "Of Despatch."
[41] Chapter xix.
[42] Burns: To a Mouse, verse 7.
[43] Ruskin: Sesame and Lilies, Lecture iii.
[44] Ecclesiastes ix. 10.
[45] C. Patmore: The Unknown Eros, "Victory in Defeat."
[46] Quoted from a biographical sketch of Sir William Gull.
[47] The Ascent of Man, Chapter x., by H. Drummond.

HEALTH OF CHELTENHAM.—Dr. J. H. Garrett, medical officer of health of Cheltenham, has just issued his report on the sanitary condition of that borough for the year 1900, the statistics which he presents being on the whole the most favourable in the history of the borough. The zymotic, infant, and general death-rates were all below the average. The general death-rate of 14 per 1000 is a record, and in portions of the borough—namely, in the South and West Wards taken together—it was only 10·3 per 1000. The mortality from the chief zymotic diseases was 0·71 per 1000. The infant death-rate was 115 per 1000 children born. The highest birth-rate during the last 10 years was 22·5 per 1000 in 1893; in 1900 it was 19·7 per 1000.

The Erasmus Wilson Lectures
ON
THE PATHOLOGY AND DISEASES OF THE THYROID GLAND.

Delivered at the Royal College of Surgeons of England on Feb. 18th, 20th, and 22nd, 1901,

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LECTURE III.[1]

Delivered on Feb. 22nd, 1901.

MR. PRESIDENT AND GENTLEMEN,—With respect to myxœdema and cretinism, as time is short, it must suffice to say here that the working out of the nature and treatment of these diseases is one of the most brilliant of the recent advances of medicine, and that our knowledge of their pathology seems now so well established as to admit of little discussion and to justify us in treating it as firm ground from which to proceed to the investigation of other and probably more complex ailments. But there is one point in connexion with myxœdema which may detain us a minute as it has led to some diversity of opinion. We have seen that in experimental removal of the thyroid gland (whether the parathyroid glands are also removed or not) there is often a narrowing of the palpebral fissures; in myxœdema the palpebral fissures are also narrowed, but the narrowing is generally attributed to the swollen condition of the eyelids. It is, however, doubtful if this is the whole explanation, and, indeed, Allen Starr says distinctly that it is not. "In myxœdema," he writes, "there is a marked tendency to abnormal heaviness of the eyelids, so that the upper lid falls and the eyes are never widely open. This falling of the lid appears to be independent of its thickening by the myxœdema; there is also a retraction of the eyeball. I have noticed in all my cases after a cure of the myxœdema that the eyeball had been previously decidedly retracted, so that when the patient was cured and the eyeball was in its natural position the previous retraction, as shown by photographs, became noticeable."

With respect to cases of sporadic goitre without symptoms—that is to say, cases in which the presence of the goitre is the only trouble—it seems now to be clearly established that the administration of thyroid gland is the best treatment. I had under my care a case of ordinary goitre in a young girl which was treated with some success with iron, iodide of potassium, and other remedies, but it was not until thyroid gland was administered that rapid improvement took place. Some time after the cessation of treatment a little enlargement of the thyroid gland reappeared, but this again was speedily removed by thyroid gland treatment. A second case of goitre was also cured, at least for a time, by thyroid gland administration. The effects of this treatment are so good that it must be regarded as a specific remedy; if it is, the enlargement of the thyroid gland must, in part at least, be attributed to an attempt at compensation, and that attempt must be unsuccessful, for otherwise the increase in size would not proceed to the large dimensions that it does.

Formerly goitres were occasionally treated by excision, but the constitutional results following this operation were often so serious that complete excision is now abandoned. These results were: (1) a feeling of weakness and lassitude; (2) coldness of the hands and feet even in summer; (3) slowness of thought, of speech, and of other movements; (4) œdema of the eyelids, lips, hands, and feet; (5) bulkiness of the face, hands, feet, and trunk; (6) dryness of the skin and the falling out of the hair; and (7) in children an arrest of bodily and mental development. These symptoms were almost always chronic in their character, and their resemblance to the effects of experimental excision of the thyroid gland proper is noteworthy; but one case of acute myxœdema is on record. From a girl, aged 18 years, the late Sir William Stokes excised one lobe of a large goitre; the only result was a satisfactory diminution of the remaining lobe. After three and a half months the remaining lobe was excised; this after 11 days was followed by convulsive seizures, puffiness of the eyelids, the face, the hands, and the feet, mental torpidity, and slowness of speech. The patient died from exhaustion only 21 days after the second operation. The absence of ill-effects after the first operation and the rapidly fatal termination after the second resembles what happens in dogs after the removal of the thyroid gland and the parathyroid glands first on one side and later on the other. Although in goitre the removal of the whole thyroid gland is now not practised the removal of one lobe is not unusual, both in ordinary goitre and in Graves's disease; this, as in Sir William Stokes's case, is often followed by shrinking of the opposite enlarged lobe. When a goitre causes dyspnœa by pressing on the trachea it becomes necessary to remove a portion, and generally the isthmus is excised; this operation, too, is often followed by atrophy of the enlarged lateral lobes. It is necessary to remember in connexion with pressure symptoms that attacks of dyspnœa occur in Graves's disease, and also, it is said, in ordinary goitre, quite apart from any mechanical cause; they are similar to, and presumably due to the same cause as, the attacks of rapid breathing which constitute so prominent a symptom in the experimental aparathyroidea of dogs.

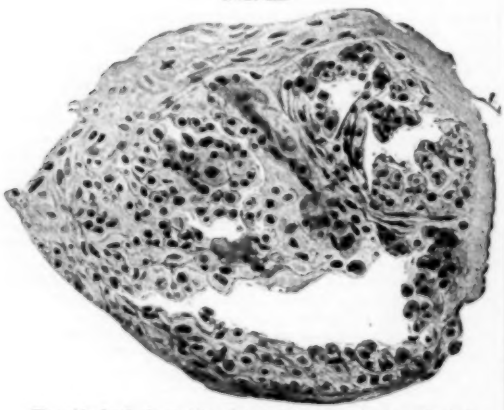
It is probably best to include under the term "Graves's disease" all cases of goitre with symptoms not to be explained by pressure. No dividing line can be drawn between the typical cases and those with less pronounced constitutional symptoms.

With respect to the pathology of Graves's disease it has been discussed whether the primary lesion is in the nervous system or in the thyroid gland; whether, in other words, some nervous derangement causes the goitre and other symptoms or whether the goitre is the cause of the exophthalmos and cardiac disturbance. Originally the starting point of the disease was thought to be the cervical sympathetic, but latterly it has been contended that the secretion from the goitre is the cause of the palpitation, the exophthalmos, and the other symptoms. This view has been urged by Möbius in Germany and in this country by Professor Greenfield in the Bradshaw Lecture of 1893. There is much to be said in its favour. In the first place, in an ordinary case of Graves's disease the enlargement of the thyroid gland is, as a rule, obvious, and when the opportunity offers it may be seen under the microscope that the gland is in a state of active secretion. On the other hand, the nerve lesions are extremely uncertain: one observer has found one change, one another, and when in a fatal case of Graves's disease a systematic examination of the nervous system has been made the result has generally been negative. Secondly, the marked contrast that exists between myxœdema and Graves's disease supports the thyroid secretion view. The first, at least in this country, to emphasise these distinctions was Byrom Bramwell and they are well set forth in his recent work. 1. In myxœdema the thyroid gland is atrophied and its secreting structure is destroyed; in Graves's disease the thyroid gland is enlarged and its secreting structure, though modified in character, is increased in quantity. 2. The symptoms of myxœdema almost always come on slowly and insidiously; those of Graves's disease not infrequently come with considerable rapidity, sometimes, indeed, after profound emotion, suddenly. 3. Myxœdema is usually developed at a later age than is Graves's disease; it comes, as a rule, between 35 and 45 years of age while Graves's disease appears between the ages of 15 and 35 years, very rarely after 50 years of age. 4. In myxœdema the temperature is subnormal; in Graves's disease it is usually normal, but temporary elevations occasionally occur, its equilibrium being easily disturbed, and the patients often complain of a feeling of heat and cold. 5. In myxœdema the skin is extremely dry and harsh and perspiration is diminished; in Graves's disease the skin is moist and perspiration is increased. 6. In myxœdema the bowels are usually constipated, whereas in Graves's disease diarrhœa is not uncommon. 7. In myxœdema the mental condition is placid and slow, while in Graves's disease there is considerable mental excitement. 8. Myxœdema is much benefited by thyroid gland treatment; Graves's disease is not, as a rule, benefited by this treatment, and some cases are made worse by it. A third argument in favour of the thyroid secretion view is

[1] Lectures I. and II. were published in THE LANCET of May 11th (p. 1317) and 18th (p. 1381), 1901, respectively.

that, as we have already seen, most of the symptoms of Graves's disease other than the goitre can be produced by the administration of thyroid preparations. A fourth argument is found in the cases of ordinary goitre which after years become converted into cases of Graves's disease; it seems more probable that some change should have occurred in the thyroid gland or secondarily to it than that a primarily central nervous lesion should have produced no other symptoms for years. Graves's disease is not known to occur secondarily to myxœdema. A fifth argument is derived from the good effects which often follow the removal of a portion of the goitre in Graves's disease. In a considerable number of these cases the removal of a lobe of the enlarged thyroid gland has been followed by marked improvement and, indeed, by cure. But there are certain objections to the secretion view. There seems no doubt that the thyroid gland is always enlarged in Graves's disease and that it is in a state of active secretion, but it does not follow that its secretion is identical with that in health, and although the observations of Hutchison and Soupault tend to show that it is, too much stress must not be laid on arguments derived from the action of normal colloid. In the thyroid gland in Graves's disease there is proportionately less colloid and in some cases no colloid at all. The microscopical examination of the thyroid gland in Graves's disease reveals various changes: (1) the vesicles instead of being round or square in section become branched and stellate; (2) the lining membrane is folded on itself; (3) the secreting cells instead of being cubical are columnar; and (4) the colloid in the vesicles has partly or wholly disappeared and its place is taken by a secretion which takes the microscopic stains badly. Now these changes are practically identical with those of compensatory hyperthrophy as seen in animals after partial removal experiments. Indeed, the resemblance is so close as to lead to the conclusion that the changes in the thyroid gland of Graves's disease are also compensatory in character—in other words, that they are secondary to some defect elsewhere in the system; that defect may possibly be in the parathyroid glands, but there is no evidence on that point either way at present. In my experiments of excising the parathyroid glands the thyroid lobes underwent these changes microscopically, but to the naked eye they did not seem enlarged; on the contrary, some of them appeared to be smaller (Figs. 12 to 20). It must

FIG. 12.

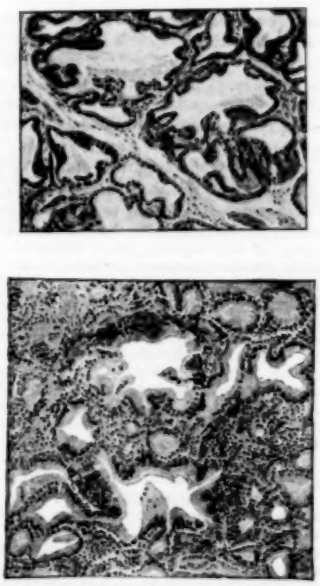


Thyroid gland of a cretin: the secreting cells have multiplied and are filling the vesicle.

be admitted that occasionally in cases of goitre without Graves's symptoms similar appearances are seen, but, as far as my experience goes, this is exceptional. Also against this view may be shown sections from two cases of adenoma of the thyroid gland; in one the sections are like normal thyroid gland and in the other there are hypertrophic changes. The first case had no constitutional symptoms; the second was a case of Graves's disease.

The treatment of Graves's disease has been carried out on various lines. The most obvious treatment is rest. This no doubt benefits the disease, or at least reduces the symptoms, but it is doubtful how far the benefit persists after the patients are up and about again, and unless they are equal to resuming their natural occupations they cannot be said to be cured or even to be nearly cured. Change of air and quietude are also obviously indicated. With respect to the administration of medicines various drugs have been tried. Belladonna stands in good repute; it may be supposed to diminish the internal secretion, but its reputation is far older than our modern ideas about internal secretion. Bromide of potassium is also given to quiet the nervous system, valerian has been prescribed with the same idea. In order to reduce the size of the goitre iodine has been used both internally and externally. For their action on the heart digitalis and strophanthus have been given, also as tonics quinine and iron. The

FIG. 13 AND FIG. 14.



The upper figure shows compensatory hypertrophy in the thyroid gland of a dog 41 days after partial excision of the gland. The lower figure shows the thyroid gland from a case of Graves's disease.

administration of thyroid gland preparations has been tried and has given different results in different cases; as a rule in doses which would benefit myxœdema no marked results have ensued. In some cases it has been attended with benefit, while on the other hand it has undoubtedly made some patients worse. This was clearly so in a case recorded by Auld in which the exophthalmos was increased, the pulse-rate was raised from 99 to 138, the temperature was elevated above the normal, and diarrhœa, sickness, and vomiting were brought on. Thymus gland feeding has been recommended, but it often fails to be of any use. Pregnancy, when it occurs, is stated by Charcot to be of marked benefit in Graves's disease; he mentions two cases and cites in support the high authority of Trousseau. But Graves's disease sometimes arises during pregnancy. Myxœdema is also said to be benefited by pregnancy, the explanation given being that the mother shares the advantage of the thyroid gland of the unborn infant. This view is supported by the abnormalities found in the thyroid gland of the puppies of partially thyroidless bitches. Halsted found in the puppies of a bitch from which one lobe of the thyroid gland had been removed and which had been sired by a dog that had also in part been deprived of its thyroid gland that the thyroid lobes in the puppies were 20 times larger than were those of normal puppies. I have repeated this experiment of Halsted. From a bitch there was removed on one side the whole of one lobe of the thyroid gland, including the parathyroid glands, and from the other side nearly the whole lobe, leaving, in fact, only one parathyroid gland and a morsel of

the thyroid gland proper. Notwithstanding this extensive removal of thyroid gland it lived and about four months after the operation it gave birth to a puppy. I found in the puppy that the thyroid lobes were large (at least they appeared so to me). On microscopical examination it was found that there was an entire absence of colloid and that the secreting cells, instead of being cubical, were columnar; these are the changes of compensatory hypertrophy and are presumably due to an attempt to compensate for the absence of the thyroid gland in the mother.

Graves's disease has been treated by operative methods. These are mainly three—namely, operations on the cervical sympathetic, operations for diminishing the blood-supply to the gland by ligaturing some of its supplying arteries, and operations for the removal of portions of the goitre. The operations on the cervical sympathetic are based on the idea that these nerves are the starting-point of the disease. We have already discussed the question as to how far the thyroid gland is, and how far the nervous system is, the primary seat of the disease; even if we decide in favour of the nervous system the question arises whether it is the sympathetic or the cerebro-spinal system that is at fault. The fact that the internal secretion of the thyroid gland can be sufficiently arrested by division of its supplying nerves to cause death shows clearly that there must be a centre for it in the medulla; we must therefore conclude that even if the nervous system is the starting point the fault lies with the cerebro spinal system and not with the sympathetic. Still, even if the sympathetic is not the primary cause it may be materially involved in the evolution of the symptoms, and of this there is considerable evidence.

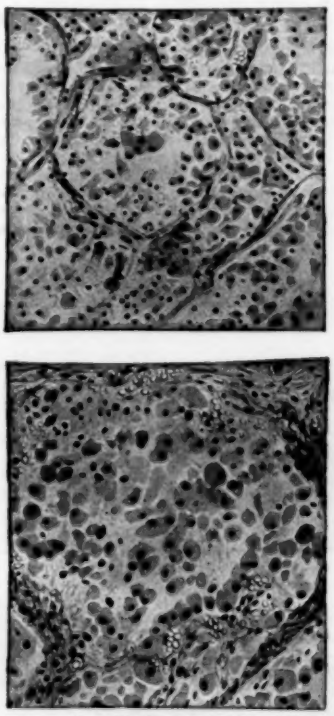
Of the five cardinal symptoms of Graves's disease it seems probable from the experiments related in the last lecture that the sympathetic has to do with the exophthalmos. The heart symptoms can be explained either by a continuous spasm of the accelerator nerves from the sympathetic or by a weakening of the action of the

FIG. 15 AND FIG. 16.

The upper figure shows compensatory hypertrophy in the thyroid gland of a dog 132 days after partial removal. The lower figure shows the thyroid gland from a case of Graves's disease.

inhibitory fibres from the vagi. The latter seems to be the much more probable condition, but there is no reason why the two conditions should not co-exist. Indeed, von Cyon says that in the goitrous animals of Berne they both are present. As to the goitre, the secretory fibres to the thyroid gland would seem to come, as far as we know, by the cerebro-spinal and not the sympathetic nerves, and if so the sympathetic would have little to do with the enlargement of the thyroid gland. As to the blood-vessels, the goitre, as may be seen in the post-mortem room, is a very substantial thing, not to be explained by engorgement of vessels; moreover, the vaso-motor nerves in the sympathetic are constrictors and would make the thyroid gland, if anything, smaller and not larger. The tremors and mental excitement in Graves's disease would be connected with the cerebro-spinal and not with the sympathetic system. Even if the sympathetic is the starting-point, it is necessary to consider whether any operation on it which would be likely to be beneficial is feasible. In the dog the augmentor fibres of the sympathetic are derived from the inferior cervical sympathetic and the annulus of Vieussens. As in man the third

FIG. 17 AND FIG. 18.



The upper figure shows the thyroid gland of a dog four days after partial removal. The lower figure shows the thyroid gland from a case of Graves's disease.

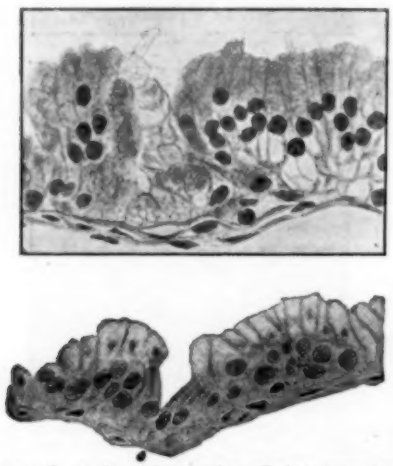
ganglion is behind the subclavian artery and the annulus round it the operation for their removal would be extremely difficult, especially on the left side, for it must be remembered that the operation has to be done on both sides. It is true that in man there are from the superior and middle cervical ganglia cardiac branches which may be augmentor, but as in the dog the augmentor fibres come exclusively from the lower part of the cord it is probable that in man also they do so mainly. However, sympathetic operations, varying no doubt in severity, have been performed in man and we proceed to see with what results.

Boissou in a thesis for the M.D. degree of Paris has collected all the cases he could obtain up to 1898, and to them he adds a valuable critical study of the whole subject. Altogether Boissou has collected 27 cases, but four of these he excludes from analysis as they, for one reason and another, prove nothing. Of the remaining 23, 15 were well-marked cases of Graves's disease and eight were ill-defined or *fruste* cases. Of the 15 well-marked cases two were cured, six were much benefited, three were slightly improved, and one received no benefit, while there were three deaths. Of the eight ill-defined cases one was cured, two were much improved, four were slightly benefited, and one was not benefited. By adding the two series together we get as a result of 23 cases operated on: three cured, eight much improved, seven slightly improved, two not improved, and

three deaths. Boissou sums up thus: "Successes are rare; in cases benefited it is sometimes one symptom, sometimes another which is improved, and the improvement is sometimes immediate, sometimes late; sometimes there are relapses in the improvement. There are, too, cases of no improvement and cases of death. Neither by division nor by excision, total or partial, have more brilliant results been obtained. From the physiological point of view, too, all is chaos. There is no agreement, no relation between the phenomena noted by the surgeons and those observed by the physiologists; also the surgical effects are in disaccord one with another." Finally, Boissou concludes: "If surgeons have been able by this new operation to modify Basedow's disease the results obtained have no constancy and are as much confused therapeutically as physiologically."

Considering the gravity of those cases in which the exophthalmos leads to ulceration of the cornea I have especially analysed the 27 cases of sympathetic operation collected by Boissou with respect to the effect on the prominence of the eyes. Of the 27 cases seven must be omitted either because there was no exophthalmos to start with or because from some cause the record is imperfect. There remain 20 cases; of these seven are said to have been cured of their exophthalmos, five were much benefited, seven derived little or no benefit from the operation as far as the exophthalmos was concerned, and in one subsequently

FIG. 19 AND FIG. 20.



The upper figure shows the secreting cells in compensatory hypertrophy of the thyroid gland of a dog. The lower figure shows the secreting cells from the thyroid gland in a case of Graves's disease.

to the operation both cornea sloughed and the patient, who became blind, died from Graves's disease. This last case and the seven cases in which no improvement followed show that the sympathetic operation is not a specific even for the exophthalmos. Also this last case, in which the patient lost her eyesight and finally died from severe Graves's disease 10 weeks after the sympathetic operation on one side and seven weeks after its removal on the other side, shows clearly that the sympathetic is not the *fons et origo mali*.

The subject of these sympathetic operations was dealt with by Mr J. Berry in a discussion on a case of Graves's disease at the Royal Medical and Chirurgical Society last year. He expressed the opinion that the sympathetic has nothing whatever to do with Graves's disease and that the sympathetic operation should never be performed. He referred to Boissou's monograph and opined that those who would read it would agree with him; that certainly has been the effect of its perusal on myself. There is, however, a small class of cases in which one might be tempted to perform a limited operation on the sympathetic; I refer to cases of ulceration of the cornea. As these only occur in patients in whom the eyelids cannot be closed the complication must be due mainly, if not wholly, to irritation. Since division of the sympathetic will reduce proptosis, this operation might be tried in these cases, although, as we have seen, it was of no avail in preventing ulceration of the cornea in one case referred to by Boissou, that of Peugnier. I am not aware of this operation having been performed in any case with the express purpose of saving the eyes, but in one case it was recommended by Dr. G. Mackay to Mr. F. M. Caird, who, however, preferred to remove one lobe of the thyroid gland, which he did and with a most beneficial effect on the eyes.

The ligature of three of the four arteries to the thyroid gland is an operation which has met with a measure of success, but there may be a difficulty in reaching the arteries behind the enlarged thyroid gland. There remain to be considered the effects of removal of a portion of the enlarged thyroid gland. A considerable number of these operations have now been performed and have been collected, analysed, and considered by various writers. Allen Starr, writing in 1896, had collected 190 cases; 74 of these cases were reported as completely cured; 45 as improved; three as not improved; 23 patients died immediately or within a few hours of the operation; and of the remaining 45 no final report was available.

The occurrence of sudden death immediately after the operation or within a day or two of it is, as Allen Starr well says, a fact of very serious import; it constitutes a most serious bar to the performance of what would otherwise be a promising operation, and it is therefore well worth while to consider its cause. "Death after these operations," says Starr, "is not due to hæmorrhage or to any want of aseptic precautions. In all the cases reported there has been a sudden rise of temperature to 105°, 106°, and 107°; a very rapid pulse (180 to 200); extreme nervous excitement and restlessness with great anxiety and distress, profuse sweating, and finally collapse and death from heart failure." These distressing calamities have been attributed to various causes. Sometimes the anæsthetic has been blamed, but many of the deaths occur rather late for that, especially in the cases in which chloroform has been administered. It must, however, be admitted that animals suffering from athyroidea die very readily from chloroform unless it is administered with extreme caution. If the deaths are due to the general anæsthetic cocaine or eucaine can be, and indeed sometimes is, substituted. It seems, however, more probable that the fatal results are in some way due to the operation itself, and if that be so the most obvious and natural view is that the removed lobe is necessary to the life of the patient. Another view is that something goes wrong during the progress of the operation. It has been thought that the symptoms are caused by the handling of the lobe during removal, by which its secretion would be pressed into the lymphatics and thus into the circulation, and that the incision into the thyroid tissue has led to a leakage at the time of operation and afterwards into the cavity of the wound from which it has been absorbed. In this way the cause of death would be an excess of thyroid secretion (normal or abnormal) in the circulation—hyperthyroidisation, in fact. Consideration, however, of the symptoms themselves would lead to the opposite view—that they are due to too little secretion in the circulation. Attacks of palpitation and dyspnœa, followed by collapse and death, we have seen to occur both in Sir William Stokes's case of acute athyroidea and in experiments on the lower animals. It is, of course, possible that in Graves's disease we have to do with an excess of one constituent of the secretion and a diminution of another, and that this latter condition is aggravated by the partial removal and constitutional disturbance during and after the operation.

Whatever may be their explanation, these cases are, no doubt, a great objection to operating, but they need not wholly turn us from that idea. It must be remembered that cases of sudden death occur in Graves's disease among patients who have not been operated on; they are mentioned in all text-books, and, in fact, are not uncommon. Also the prognosis to life in this disease is not at all satisfactory; death has been recorded as occurring in six weeks from the onset, and even in the favourable surroundings of a hospital deaths do occur from time to time, sometimes suddenly without apparent cause, sometimes from diarrhœa or some complication. Indeed, it is from the cases of those patients who die in hospital that our knowledge of the pathology is mainly derived. What may be the subsequent history of the patients

who return home is not certainly known; some of them continue ill for a long time, others may no doubt improve, but it has been denied that cases of Graves's disease ever completely recover, at least without operation. Of the 190 cases of operation collected by Allen Starr 74 are reported as completely cured and 45 more as improved; these results are very encouraging, as are also the records of individual cases. One of the earliest operations in Graves's disease was performed by Lord Lister when he was at the Edinburgh Infirmary. The patient was a woman, aged 26 years. She had been ailing for five years, during the last three of which she had had well-marked symptoms of Graves's disease, for which, presumably, she had had medical treatment. It was intended at the operation to remove the whole of the thyroid gland (this was before the dangers of so doing were recognised), but this probably was not done. Before operation the pulse-rate was 130 and the pulse was irregular; five days after the operation the pulse had fallen to 74 and was regular, and in a few weeks the exophthalmos was much reduced. The patient was seen again 10 years later, at which time she was suffering from phthisis. The exophthalmos was slight, the excitement of the circulation was nearly gone, and there was no thyroid tumour, but a slight eminence in the middle line suggested that a portion of the isthmus had been left at the operation; there were no symptoms of myxœdema.

As another example a case recorded by Reidel may be mentioned. The patient, a female, aged 20 years, had suffered for years from a goitre and during the later years there had been in addition palpitation so severe that she complained that her heart seemed trying to jump out of her chest. Exophthalmos was so extreme that it was noticed in the street, and the patient had become extremely nervous, depressed, and much emaciated. The right half of a parenchymatous goitre was excised; the case did well. Three years after the operation the patient was seen again; she was in good spirits and in full enjoyment of life. The palpitation was completely cured, she could walk for an hour at a stretch, and at a ball could take part in every dance. The exophthalmos and emaciation were gone.

A case in a male under Sir William Stokes's care may also be cited. The patient was a farmer, aged 32 years, who seven years previously had had a fright caused by seeing a friend killed by a threshing machine. Three weeks after this he noticed a slight enlargement in the neck, which was followed by palpitation and exophthalmos. These symptoms continued, together with other characteristic symptoms. Six years later he was admitted to hospital where under treatment he improved, but on returning home he relapsed and was again admitted to hospital, when Sir William Stokes was asked to see him. Operation was decided upon and a central tumour of the size of a Tangerine orange was removed, together with part of one lobe. In a few weeks there was marked alleviation of all the symptoms and the patient ultimately recovered. Two years after the operation there had been no recurrence of the symptoms.

My own experience is confined to two cases. In the first the patient was very ill, palpitation and dyspnœic attacks being the main symptoms. As she continued to get worse operation was decided upon and the right lobe of the enlarged thyroid gland was removed. The patient got much better and all the symptoms were greatly relieved, but there are still (it is now eight years since the operation) symptoms of the disease. The other case was much less severe. The symptoms, however, did not yield to medical treatment, and as there was a unilateral swelling operation was decided upon. The swelling proved to be due to an adenoma which was excised. The symptoms completely disappeared; indeed, the tremors had gone the day after operation. On microscopical examination the adenoma was seen to have undergone hypertrophic changes. Great improvement in Graves's disease after removal of an adenoma has been noticed before. Murray records, too, a case in which the symptoms almost completely disappeared after drainage of a cyst in a goitre. In the present case the adenoma was found to have undergone the usual changes seen in Graves's disease; the rest of the thyroid gland was little if at all enlarged. Many other cases very encouraging as to operation could be cited. Probably the lesson to be learnt from the fatal cases is not that operations should not be performed, but that they should be performed earlier.

THE SURGICAL TREATMENT OF CHRONIC ULCER OF THE STOMACH.[1]

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THE treatment of gastric ulcer is at first essentially medical and when properly carried out and for a sufficient length of time it is usually completely successful. Leube says that one-half or three-fourths of all cases will be cured by four or five weeks of treatment, but that if not cured in that time they will not be cured by medical treatment alone—a view which, I feel sure, is a true one. Unfortunately, however, in many cases treatment is stopped as soon as relief from pain is obtained and long before the ulcer is healed. In some cases this may be due to the uncertainty of diagnosis or from the impatience of the patient; perhaps in others to ignorance as to how long it takes to secure the healing of a gastric ulcer. The earlier in the course of the disease that radical treatment in the shape of dieting and rest is adopted, the less prolonged will the treatment need to be and the more likely is it to be effectual. But probably the very earliest time that a patient should be allowed to be out of bed is from a fortnight to a month after all pain and tenderness have disappeared. Failing this thorough treatment relapses will be certain to occur and in the long run complications will supervene or the ulcer will become chronic, when, though medical treatment may relieve in some cases, cure can be looked for in the greater number only by surgical methods.

In considering the treatment of ulcer of the stomach it is useful to hold in view the course of an ulcer of the leg, which directly the healing stage has arrived becomes free from pain; but this indicates neither that healing is completed nor that care may cease, and should treatment be abandoned and the ulcer become chronic, though it may even then be painless, it is at any time liable to become inflamed or to extend; moreover, the surrounding tissues become infiltrated with lymph, which tends to organise, and this in a hollow viscus soon ends in stricture, as in the leg it tends to drag on the surrounding skin and produce constriction of the limb.

The surgical treatment of intractable or relapsing gastric ulcer is in the greater number of cases the only satisfactory method of dealing with these refractory cases, and operation should be resorted to at a much earlier period than has hitherto been the custom, and always before the patient is so far reduced by pain and starvation or the supervention of serious complications that weakness and anæmia render any operative procedure hazardous. Ulcer of the stomach is a much more serious matter than is generally recognised, for according to various authors it has a mortality, when treated by general and medical means only, of from 20 to 50 per cent. Dr. Einhorn, in his well-known work on Diseases of the Stomach (p. 223), says: "At first glance it would appear that the prognosis of gastric ulcer is quite good, especially nowadays, when the diagnosis of the affection is usually made at an early date." However, if we take into consideration the tabulated statistics given by Debove and Rémond (p. 276) in reference to the outcome of all cases of ulcer we become more careful in our favourable predictions. This table gives in 100 cases of ulcer: perfect cure, 50; perforations and peritonitis, 13; foudroyant hæmatemesis, five; pulmonary tuberculosis, 20; inanition, five; and different complications, seven. The excuses of a few years ago that there is a great responsibility in recommending surgical treatment either from the uncertainties of diagnosis or from the risk of operation can no longer avail, since the diagnosis of gastric ulcer, thanks to the researches of Ewald, Hemmeter, Einhorn, and others, has been brought to a greater state of perfection than exists in many other obscure diseases, where radical treatment has to be adopted on much more slender foundations; and fortunately, now that the mortality in operations for simple diseases of the stomach, excluding perforation and hæmorrhage, has been reduced in the hands of experienced surgeons to 5, or even

[1] A paper read before the American Surgical Association on May 8th, 1901.

less than 5, per cent., the great risks of surgical treatment cannot be advanced even by its most ardent opponents.

We have to consider, not only the treatment of gastric ulcer itself, but also that of its complications, which are no less numerous than serious, and before describing each separately it may be as well to name them collectively. They are as follows: (1) local peritonitis or perigastritis ending in adhesions; (2) local peritonitis ending in suppuration and a localised abscess; (3) subphrenic abscess; (4) abscess of the liver, pancreas, or spleen; (5) fistula between the stomach or pylorus and adjoining organs or with the surface of the body; (6) acute perforation of the stomach wall; (7) general peritonitis; (8) hæmatemesis and melæna; (9) dilatation of the stomach; (10) tumour of the stomach or the pylorus; (11) cicatricial stenosis of the pylorus; (12) hour-glass stomach; (13) spasm of the pylorus producing intermittent narrowing (Reichmann's disease); (14) atonic motor deficiency; (15) severe gastralgia; (16) persistent vomiting; (17) tetany; (18) acute or chronic pancreatitis; (19) profound anæmia resembling the pernicious form; (20) pressure on, or stricture of, the bile-ducts with jaundice; (21) catarrh of the gall-bladder from adhesions producing attacks like those of cholelithiasis; (22) great loss of flesh and strength ending in phthisis; and (23) cancer secondary to ulcer ("ulcus carcinomatosum").

We are not prepared to subscribe fully to the views of Tricomi,[2] who draws a parallel between the treatment of hernia and that of ordinary gastric ulcer and proposes that as hernia is treated radically with success, so gastric ulcer should be treated radically by the performance of gastro-enterostomy. Heydenreich[3] argues: "The death-rate from all cases of gastric ulcer is from 25 to 30 per cent., but from gastro-enterostomy only 16·2 per cent.; therefore, the operation has less danger than the disease." The question of medical *versus* surgical treatment in this class of cases is one, however, that can be much simplified by a careful study of statistics. At the time I delivered the Hunterian Lectures in March, 1900, I had been able to collect from various sources 188 operations on the stomach for gastric ulcer (excluding those for perforation and hæmorrhage) of which 157 recovered and 31 died, thus giving a mortality of 16·4 per cent. These included 34 personal cases.

Now, although the deaths from gastric ulcer medically treated averaged 25 per cent. and those from even the worst and most inveterate cases of ulcer when treated surgically only 16 per cent. at the time of those lectures, yet the difference did not then appear so great as to make it desirable or prudent very strongly to advocate surgical treatment until the disease had become chronic or until serious complications had ensued. To-day, however, the facts are very materially altered by the all round improvement in operations on the stomach, and the contrast of 25 per cent. of deaths in cases treated medically, and 5 per cent. as shown in our latest statistics in those treated surgically, in the worst and most complicated cases, is so striking that we feel it incumbent to urge most strongly that although cases of gastric ulcer should first be submitted to medical treatment, yet if such treatment fails to cure in a reasonable time, or if relapses occur on the resumption of solid food, then surgical should take the place of medical treatment, for it is unfair to the surgeon to hand over to him almost moribund cases, and it is unjust to the patients to persist in dosing them with medicine, or otherwise treating palliatively cases that can only be benefited or cured by surgical means.

Operative treatment.—Before the abdomen is opened it is quite impossible to say what operation or operations will be required and the surgeon must be prepared to adapt himself to circumstances on discovering the position of the ulcer and the conditions associated with it, especially as to the presence or absence of adhesions and other complications. Any one of the following operations, or a combination of one or more, may be called for in each individual case: exploratory gastrotomy; gastro-enterostomy to secure physiological rest to the stomach and relieve the hyperchlorhydria, or in other cases to short-circuit a stenosis; excision of the ulcer; pylorectomy; pyloroplasty; gastroplasty; gastro-gastrostomy; gastrolysis; pylorodiosis; and gastroplication.

The preparation of the patient.—It has been the custom with many surgeons to put stomach patients through a long course of preliminary treatment, such as frequent lavage of the stomach and abstention from food before operation. This, as a rule, is quite unnecessary and certainly inadvisable in the greater number of cases, first because the treatment is depressing and debilitating in the case of patients already exhausted by a long illness; secondly, as proved by Dr. Harvey Cushing's bacteriological investigations, the stomach contents speedily become aseptic if the mouth be cleansed and aseptic foods administered; and, thirdly, as proved by ample clinical experience, elaborate preliminary treatment is unnecessary to success. If the stomach is greatly dilated and the contents are foul, then lavage with simple boiled water night and morning is adopted for two days before operation. The careful cleansing of the mouth and teeth and the administration of foods sterilised by boiling is advisable. The last meal is given the night before, about 12 hours; the stomach is washed out about two hours and a nutrient enema given about an hour before operation. In other cases no lavage is adopted, but the same care is exercised in cleansing the mouth, giving sterilised food, and administering a nutrient enema consisting of one ounce of brandy, one ounce of liquid peptonoids, and 10 ounces of normal saline solution. Every patient is enveloped in a suit of cotton wool made by the nurse out of Gamgee tissue, and each has an injection of 10 minims of liquor strychniæ, B.P., administered subcutaneously before the operation is begun. The preparation of the skin and other aseptic details of the operation differ in no respect from those observed in operations generally.

Exploratory gastrotomy, or opening the stomach by a free incision in its anterior wall, is an operation occasionally called for in the surgical treatment of ulcer: (1) in order to verify the diagnosis of ulcer when there is so much thickening of the stomach walls as to suggest the presence of cancer; (2) when, although the symptoms have pointed to ulcer as the cause of the gastric trouble, the stomach on exposure betrays no evidence of puckering or other characteristic signs, and when in order to verify the diagnosis and ascertain what is best to be done it is felt desirable to examine the interior of the organ; (3) in certain cases of gastrorrhagia it is desirable to perform exploratory gastrotomy in order to find and to ligature the bleeding vessels or to otherwise arrest the hæmorrhage; and (4) it necessarily forms part of any operation for the excision of ulcer of the stomach. It is not necessary for me here to enter into any detailed description of the operation, which must be so familiar to all my hearers and which requires to be varied according to the object in view. The following are examples of exploratory gastrotomy for ulcer.

CASE 1.—The patient was a man, aged 38 years. There were symptoms of chronic ulcer extending over several years. On exposure of the stomach there was no evidence on the surface to indicate the accuracy of diagnosis. Exploratory gastrotomy was performed. A large ulcer, one and a half inches by three inches, on the posterior wall of the stomach was discovered. Posterior gastro-enterostomy was performed and recovery ensued.

CASE 2.—This was a case of acute gastrorrhagia. There was no evidence on exposing the stomach. Exploratory gastrotomy was performed. Numerous bleeding ulcers were seen, two of which were bleeding freely and were ligatured *en masse*. Gastro-enterostomy was performed and recovery ensued.

Excision of the ulcer is, as a rule, unnecessary, but not always to be avoided, as in some cases of bleeding ulcer and in others where the thickening and induration render it difficult to decide on the absence of malignant disease. This was the case in a man, aged 54 years, on whom I operated in 1891, when finding the pylorus the seat of diffuse induration excision of the whole indurated area was performed successfully. A careful examination of the removed mass showed that the growth was inflammatory around a chronic ulcer. In another middle-aged man where the diffuse induration was suggestive of cancer the pylorus was opened and a deep ulcer on the posterior wall successfully excised, the edges of the original incision as well as the margins of the posterior wound being brought together in a direction transverse to the axis of the pylorus over a bone bobbin, as in the modified operation of gastro-enterostomy. Rydygier prefers excision of the ulcer to gastro-enterostomy, because he believes that carcinoma not infrequently develops in the scar of an old ulcer. It is impracticable to give any specific description of the operation of excision of an ulcer, seeing that the procedure will vary according to its size and position. After excision of an ulcer the bleeding from large vessels must be controlled by ligature, but the oozing from the smaller

[2] Riforma Medica, 1899.
[3] Semaine Médicale, Feb. 2nd, 1898.

vessels will be stopped readily by the continuous suture employed to bring together the edges of the wound. If the excision involve the serous coat a Lembert's continuous stitch with a silk or celluloid suture will be necessary. Should an excision have been near the pylorus the line of suture must be placed transversely to the axis of the canal so as to avoid stricture. The following cases are examples of gastric ulcers treated by excision.

CASE 3. *Ulcer of the pylorus, stenosis, dilatation of the stomach, excision of the ulcer and pyloroplasty.*—A man, aged 38 years, was admitted to the Leeds Infirmary with the history of stomach trouble for 13 years. Pain after food and vomiting were the initial symptoms. Severe hæmatemesis occurred six years after the commencement of symptoms. Great loss of flesh and weakness were followed by inability to work, although he had stomach lavage and other appropriate treatment. On admission the patient was very thin and profoundly weak. He weighed 8 stones. A swelling could be felt below the right costal margin. The stomach reached three inches below the umbilicus and there was visible peristalsis. Free HCl was present. Operation was performed on Nov. 15th, 1900. The pylorus was found much thickened, forming a nodular swelling adherent to the gall-bladder and liver and to the abdominal wall by omental adhesions. After separating the adhesions a small perforation was discovered in front of the pylorus, evidently the site of a perforation which his medical man, who was present, said he remembered occurring some months previously and which was then treated successfully by rest and rectal feeding. The pylorus was freely laid open and found to be the site of a round perforating ulcer in front and another on the posterior wall—the latter had perforated into the substance of the pancreas; both were excised, thus practically constituting a pylorectomy. The edges of the posterior wound were brought together transversely to the axis of the stomach. The anterior wound was prolonged into the duodenum and stomach and its edges were brought together transversely to the axis of the stomach over the bone bobbin, thus leaving a capacious channel between the stomach and duodenum surrounded by healthy mucous membrane. Recovery was uninterrupted and he was discharged on Dec. 12th, weighing 8 stones 5 pounds. On Jan. 9th, 1901, he returned to report himself well and then weighed 9 stones 11 pounds.

CASE 4. *Pyloric ulcer treated by excision of the ulcer and pyloroplasty.*—The patient was a woman, aged 44 years. She had been well till two years ago when she had colic and loss of flesh. Under treatment she recovered and regained some of her lost weight. On Sept. 15th, 1897, there was a recurrence of attacks similar to that of a year before, but with pain at the right side over the pylorus. There were loss of weight and of strength. The patient had for some time been an invalid and had been continuously under medical treatment for months. Her weight was 6 stones 11 pounds. There was visible peristalsis towards the pylorus which was fixed to the gall-bladder, but no pain or tenderness. The liver was two inches below the costal margin, but not nodular; no jaundice was present. Operation was performed on July 23rd, 1898. An ulcer at the pylorus was found adherent to the liver which formed its floor. There was stenosis of the pylorus. Pyloroplasty was performed after excision of the ulcer, the opening being sutured transversely over a bone bobbin. On Dec. 3rd the patient had gained 1 stone 8 pounds in weight. There was no trouble in digesting anything. On Dec. 23rd, 1899, she was reported as "very well" and of normal weight.

The operation for pylorectomy for ulceration of the pylorus may be conveniently mentioned under the heading of excision of ulcer. Dr. Rodman[4] has collected from literature and personal correspondence detailed reports of 40 pylorectomies, partial gastrectomies, and excisions for ulcer, with six deaths. This includes cases since 1881, but the later operations under improved technique contrast favourably with the earlier ones. I have myself performed the operation of excision of gastric ulcer six times, all the patients recovering. Nevertheless, the mortality after excision will probably always be higher than the more simple operation of gastro-enterostomy. The more severe and radical operation should therefore be reserved for cases that are not suitable for the less severe operation or in which the suspicion of cancerous degeneration is entertained and cannot be disproved on naked-eye inspection. The following case is an example.

CASE 5. *Tumour of the pylorus and chronic hæmatemesis due to ulcer.*—In 1891 I was asked by a medical friend to see a man, aged 54 years, who for six months had suffered from pain coming on an hour after food and more recently from vomiting blood of coffee-ground character in considerable quantities, so that he was not only reduced in flesh and strength but had also been rendered profoundly anæmic by the loss of blood. A tumour of the pylorus could be easily felt and the stomach was markedly dilated. As he was rapidly losing ground an operation was performed and the pylorus was found to be thickened and nodular, with adhesions to the liver and omentum. After separating the adhesions the pylorus was excised and the opening of the duodenum was fixed to the opening in the stomach by means of two lines of sutures without the use of a bobbin, the rest of the stomach aperture being closed by a double layer of sutures. The tumour proved to be inflammatory around an open ulcer which had been the source of the hæmorrhage. The bleeding was not repeated and the patient rapidly gained flesh and returned home within the month.

The subsequent history of this case is interesting on account of cicatricial contraction of the new pyloric aperture which led to the invention and employment of a decalcified bone bobbin to act as a temporary splint over which to apply the sutures and thus to secure a large aperture which has little tendency to contract.

Gastro-enterostomy, in the absence of special complications, is the operation to be relied on in the treatment of ulcer of the stomach. It acts by securing physiological rest by means of drainage, thus allowing the ulcer to heal without being subjected to the irritation of acid secretion, accumulation of food, or frequent stomach movement. It also, while remedying the hyperchlorhydria, relieves pyloric spasm and while preventing stagnation of fermenting fluids materially diminishes gastric dilatation. The posterior operation is the one I personally prefer, the junction of the posterior wall of the stomach with the first part of the jejunum being effected by two continuous sutures with or without a decalcified bone bobbin. The use of a bone bobbin not only secures an ample and immediately patent opening between the two viscera for the passage of the stomach contents, but protects the line of union from the irritation of the stomach contents. The whole operation can be easily completed in half an hour, and it may even be done in half the time. Along with my colleague, Mr. Moynihan, I have given my full experience of the operation and of stomach surgery in general in book form, now in the hands of the publishers. Our experience with the posterior operation has been very favourable, not only in the rate of recovery of the patients, but in the smoothness of the recovery, many of the patients recovering without even once vomiting, and only on two occasions have we seen regurgitant vomiting of bile, which in the anterior operation is much more frequently seen and at times becomes serious or even leads to a fatal issue. We have performed the posterior operation on 40 patients with two deaths, or an average mortality of 5 per cent., but as the deaths were from more or less accidental causes which should be avoided in the future, and occurred respectively on the tenth and eleventh days after operation, during the whole of which time the patients had been able to take and to assimilate food, the gastro-enterostomy *per se* cannot be blamed for the result, which might under similar circumstances have occurred after any operation.

Dr. Fantino[5] examined Professor Carle's cases of gastro-enterostomy as regards the following points: (1) changes in the peristalsis of the stomach; (2) the ability or non-ability of the new sphincters to close the outlet; (3) the capacity of the stomach; and (4) the secretion of hydrochloric acid. In the cases examined the operation immediately improved the peristaltic power of the stomach, though it did not render it normal. The stomach could generally empty itself, but did so gradually. Systematic examinations of the stomach contents were made after test-meals, &c., and they showed that after an irregular period the stomach regained completely its power of emptying itself; in fact, as a rule, after gastro-enterostomy the stomach will be found practically empty in from three to five hours after a meal. Generally, it was found that the stomach decreased in size

[4] Philadelphia Medical Journal, June 9th, 1900.

[5] Archiv für Klinische Chirurgie, Band xlix., pp. 1 and 2.

soon after gastro-enterostomy, so that the formerly distended organ became normal in size. Examination of the stomach by means of distension with carbonic acid and by other methods showed that a sphincter was developed at the new opening and that its power increased with time. The secretion of hydrochloric acid after operation was studied. In cases where there was formerly hyperacidity this condition was lost, and though the degree of acidity in any individual case varied from time to time, yet these variations did not depart from physiological limits. In the same examinations it was found that regurgitation of bile into the stomach took place, but it was of no importance so long as the outlet from the organ was sufficient. In cases of hyperacidity and anacidity there was no change in the gastric juice after operation, showing clearly that this condition is not dependent on obstruction but on previous changes in the mucous membranes, these changes being probably in the nature of an atrophy of the peptogastric glands. The following cases are given as examples of the treatment of gastric ulcer by gastro-enterostomy.

CASE 6.—The patient was a woman, aged 32 years. Pyloroplasty was performed during active ulceration of the pylorus in December, 1895. There was great relief for a time, but later there were recurrence of dilatation, vomiting, pain, and other symptoms. There was very considerable loss of flesh. The patient was thin and anæmic; the pulse was feeble and rapid; there was marked dilatation, the stomach reaching well below the umbilicus. Anterior gastro-enterostomy was performed on Oct. 4th, 1898 (a bone bobbin was employed). In October, 1899, the patient was well and active. In February, 1900, she had gained 1 stone 10 pounds.

CASE 7.—The patient was a man, aged 28 years, who had a pyloric ulcer and a tumour of the pylorus. Two years ago he weighed 12 stones 12 pounds; he now weighed 9 stones 6 pounds. He had pain two hours after food. For the last two months there had been vomiting on an average five times a week; twice there had been coffee-ground vomit. There was enormous dilatation of the stomach. The pyloric tumour was moveable and there was visible peristalsis. Operation was performed on August 4th, 1899. There was a large mass at the pylorus, evidently thickening due to active ulceration; the glands were large but not matted. Anterior gastro-enterostomy was performed (a bone bobbin was used). On the 27th there was good recovery and the patient weighed 9 stones 7 pounds. On Sept. 9th the patient weighed 10 stones 13 pounds and could eat anything. He was well in 1901.

CASE 8.—The patient was a man, aged 31 years, who had an extensive ulceration of the stomach with a large tumour. He had suffered from dyspepsia for 17 years, which had been more severe during the last 20 months. 16 months ago vomiting recurred and from the outset large quantities were ejected but never containing blood. There was recurrence occasionally of similar attacks, which were always relieved by treatment. In December, 1897, the stomach reached the tubes and visible peristalsis was seen. Relief followed dieting and lavage till March, 1898, since which time pain had been almost constant. The pain was not materially worse after food, nor was it relieved by vomiting. The loss of weight was from 10 stones to 8 stones 6½ pounds. There was great feebleness. Operation was performed on May 6th, 1898. There was a large irregular tumour at the pylorus and along the lesser curvature, but the glands, though large, were discrete. Anterior gastro-enterostomy was performed, a bone bobbin being employed. The patient was 8 stones in weight when he left the home on June 7th. On August 17th he weighed 9 stones 3 pounds. A letter, dated Feb. 12th, 1900, says: "My health continues perfect. I have not lost a day's work through illness since I recovered."

CASE 9.—A woman, aged 32 years, was sent to me with a history of stomach symptoms extending over several years. She had had hæmatemesis in 1892 and in 1896, since which time she had suffered from flatulency and pain after food. For two years epigastric pain was constant, but it was increased by taking food. A year ago she had vomited daily; then she had relief for a time, but for some months only milk could be retained. Epigastric tenderness was well marked and on distending the stomach with CO_2 it reached half an inch below the umbilicus and far over to the right of the middle line. On Oct. 5th, 1900, posterior gastro-enterostomy was performed, a bone bobbin being employed. Recovery was uninterrupted. The patient returned home within the month, taking solid food without any discomfort and gaining flesh. On Nov. 8th Dr. A—— wrote: "I have seen Miss —— since her return and there is every reason to be pleased with her condition. She has lost all her pain and is taking food well. Allow me to thank you for her restoration to comparative health." In February, 1901, her weight was 8 stones 6 pounds; at the time of operation it was 6 stones 12 pounds.

CASE 10.—The patient was a man, aged 52 years, who began to suffer in 1897 from symptoms of ulcer of the stomach, which were relieved by restricted diet and general treatment, but in July, 1899, the symptoms returned with great loss of flesh and strength. Well-marked dilatation of the stomach was discovered and operative treatment was advised. Lavage and other treatment were carried out in London and in Scotland, but without material improvement. When first seen by me there was visible peristalsis with well-marked stomach splash and a tender spot under the right costal margin. Although tall the patient only weighed 8 stones 10 pounds and he was extremely weak and pallid. Operation was performed on Oct. 12th, 1900. Hour-glass stomach was found, but the stricture was not extreme. There was puckering on the anterior wall of the stomach with well-marked thickening. Free HCl was discovered in the stomach contents. Posterior gastro-enterostomy was performed. Good recovery followed. On March 4th, 1901, the patient wrote saying: "I am pleased to be able to tell you that I have had no return of my former complaint and that I eat, drink, and sleep well. Have got back to my former weight."

CASE 11.—The patient was a man, aged 45 years, residing at Batley. He gave the history of pain about an hour after food, with great loss of flesh, which he had experienced for two years. For nine months he had vomited every day or every second day a large quantity of yeasty material but no blood, though he was very anæmic. There were well-marked signs of dilatation, with tenderness over the pylorus. Operation was performed on June 12th, 1900. On opening the abdomen the pylorus was found to be much thickened and adherent, forming a tumour, and through the centre of the mass a No. 10 catheter only could be passed over a roughened, ulcerated surface. A posterior gastro-enterostomy was performed. With regard to the after history an uninterrupted recovery followed. Food was begun on the second day and solids could be taken in the second week without pain. The patient rapidly gained flesh and strength and was now well.

The following case illustrates the value of gastro-enterostomy in acute hæmatemesis.

CASE 12. *Chronic ulcers; hæmatemesis; gastro-enterostomy.*—A farmer residing in Essex was sent to me on March 26th by Dr. A. J. T. White who kindly furnished the following history. "I first saw Mr. —— five years ago; he had then occasional pain in the epigastrium, with much flatulence and at times vomiting. This kept on at intervals more or less for three years. Eighteen months Dr. G—— saw him with me. At that time instead of his former weight of 16 stones he only turned the scale at 12 stones. He then improved gradually for about three months and gained about a stone in weight. Six months later, or about a year ago, he, while out driving, had some abdominal pain and vomited considerable quantities of blood. He continued being sick and suffering for some time with slight hæmatemesis and melæna, but again improved. About three or four months ago he got worse and has been vomiting and suffering considerable pain on and off ever since. I have very little doubt but that this original trouble was gastric ulcer, but my fear now is lest malignant ulceration should have supervened, and some time ago I asked him to see you. He could not go then as he had various business matters to set right, but now is willing. He is a man of iron will and constitution though terribly pulled down." On the patient's arrival in Leeds he went direct to a surgical home, his weight then being 10 stones. He was then suffering severe pain but was able to take a little milk, which was, in fact, the only form of food which he had been able to digest for a long time. Within a few hours he was seized with violent hæmatemesis and vomited five pints of clots and dark fluid mixed with mucus. Rectal feeding was at once adopted and an ice-bag was applied to the epigastrium. The next day much coffee-ground material was vomited and on the third day the bleeding ceased. An operation, which was clearly demanded, was arranged for March 22nd, but on the night of

the 21st he again vomited two pewtersful of pure dark blood which clotted soon after being vomited. The stomach was quite empty of food, as after the night of his admission feeding had been entirely rectal. He was now extremely weak, but as the vomiting and bleeding were continuing Dr. White agreed with me that it would be better not to postpone operation, for he was rapidly losing ground and clearly could not stand a greater loss. An hour before operation he vomited blood freely again. On the morning of the 22nd, on opening the abdomen, the lesser curvature of the stomach was found to be much indurated, forming a tumour. There was also much puckering of the surface of the stomach and the glands in the greater and lesser omentum were enlarged but discrete. A posterior gastro-enterostomy was performed, a bone bobbin being used. In order to guard against shock he was enveloped in cotton wool, had 10 minims of liquor strychniæ (B.P.) given subcutaneously before operation, and had a pint of saline fluid with an ounce of brandy given into the bowel. Immediately after operation, which was finished within the half hour, nearly a pint of saline fluid was injected into the subcutaneous tissues of the axilla and another pint, together with an ounce of brandy, was administered per rectum. During the day three injections of five minims of liquor strychniæ were given and the rectal enemata were repeated. Very little shock was felt, and the after-progress was uninterrupted. The bowels were moved on the third day, and the wound was dressed and found healed on the tenth. No more blood was parted with, and stomach feeding was begun four days after operation. By the end of the week he was taking as much as five pints of fluid nourishment in the 24 hours. He said he had never had any pain since the operation and was feeling better than he had done for a long time. He had lost all the acid eructations, the constant burning at the epigastrium, and the flatulency. He returned home within the month very well, and, as showing the state of his digestion, he had gained 4 pounds in the week before he left the surgical home.

Pyloroplasty as a curative measure in this class of cases has certain very definite limitations, but where it is feasible it is a method of great utility which can be performed rapidly and with very little exposure of viscera. Pyloroplasty, if the pylorus be stenosed, free from extensive adhesions, easily drawn forward and not actively ulcerating, is a simple and short operation, and in quite a number of cases of both gastric and pyloric ulcer I have found it to answer well. It must not be relied on, however, where active ulceration of the pylorus itself is found, unless at the same time the ulcer be completely excised; otherwise cicatricial contraction will follow. It acts in the same way as does gastro-enterostomy by affording a free exit to the stomach contents and thus securing physiological rest to the stomach. The histories to be related exemplify the complete success which attended the operation in appropriate cases and also the disappointment which followed its employment in one of the earlier examples which owing to inexperience was not properly selected.

Professor Carle and Professor Fantino[6] compare the operation of gastro-enterostomy and pyloroplasty. Out of 14 cases in which the latter operation was performed only one died. The results of pyloroplasty, as regards function, have been little noticed in literature. To the author's 14 cases three may be added where the operation was by tearing, but the results were the same. In all the 17 cases the results were excellent, and in 13 of them they were perfect and permanent, as it is now from three to seven years since operation. In these the condition of the secretions and of the peristaltic power of the stomach was the same as after gastro-enterostomy for non-malignant stenosis. Diminution in the size of the stomach was not so marked as would be expected in the presence of such remarkable recovery of the general health and of the stomach's power to empty itself. In all cases, with one exception, the gastric capacity was more or less diminished, but in no case did it become normal in size. A few cases must be excepted where operation was performed for hyperacidity with gastric atony. In these, four or five months after operation, there were delayed evacuation of the stomach and a feeling of weight. Although the general improvement was considerable, yet the authors were persuaded that a posterior gastro-enterostomy would have given better results. In one of the cases a subsequent gastro-enterostomy gave a perfect recovery. In cases where there was hyperacidity before the operation there was a rapid return to the normal, but *not to below* normal, as was found after gastro-enterostomy. The authors believe that the rapid and great diminution in hydrochloric acid after the latter operation is due to the very rapid evacuation of the stomach after a meal, and they do not deny the possible influence of a regurgitation of bile into the stomach. Both these conditions are absent after pyloroplasty, hence the difference in secretion.

In cases of hyperacidity and anacidity operation produced no change in this particular and yet health was restored. The results of pyloroplasty may be summarised: (1) regurgitation of bile into the stomach is prevented; (2) secretion of hydrochloric acid when it has been excessive becomes normal; (3) if the secretion of hydrochloric acid has been diminished or absent before operation it remains *in statu quo* after operation; (4) if there has been primary gastric atony peristalsis is but little improved; (5) this function improves rapidly or reaches perfection if the muscular contractility has been normal or increased, and when the obstruction was due to fibrous stenosis or pyloric spasm; (6) in all such cases evacuation of the stomach is accomplished in its physiological period (only in rare cases, and these only in the first months, after operation, may it be delayed); (7) the capacity of the stomach always decreases but rarely becomes as small as normal; and (8) the pylorus recovers tone.

Points of difference between the results of pyloroplasty and gastro-enterostomy are: (1) the absence of regurgitation of bile and hence the absence of any possible biliary influence on the gastric secretions; (2) the evacuation of the stomach is not accelerated, hence the difficulty the stomach has in reaching its normal size; and (3) the slight or negative result obtained by pyloroplasty in obstruction from primary gastric atony compared to the positive results from posterior gastro-enterostomy.

Pyloroplasty is too dangerous in cases where there is extensive induration of the tissues, much peripyloritis and adhesions to liver, gall-bladder, colon, &c., and in cases of duodenal stenosis. It is indicated in cases of spasmodic stenosis and in slight annular stenosis from ulceration accompanied by muscular hypertrophy.

In the Hunterian Lectures I collected 318 cases of pyloroplasty from all sources, of which 269 recovered, which equals a mortality of 15·4 per cent.; this included 14 cases of the lecturer's, of which 12 recovered—a mortality of 14·2 per cent. As in the earlier operations many were performed on cases that would be now treated by gastro-enterostomy the mortality in properly selected cases should not exceed 5 per cent. at the outside estimate, and of the 12 cases I have operated on since 1897 there is no fatality to record.

CASE 13.—The patient was a woman, aged 29 years. She had had "spasms" for 10 years, but the pain was more on the left side. She was attacked two or three times a week; the attacks would start without apparent reason and last an hour or two, but they might persist for 24 hours. The patient was relieved by vomiting. She had severe cramps in the legs and a loss of 2 stones in weight; there was no jaundice but marked constipation. The right rectus was rigid; there was no rigidity, but tenderness to the left. Dilatation of the stomach was well marked on Nov. 22nd, 1895. She was relieved under treatment which was followed by a relapse; she was now vomiting daily. Her weight was 9 stones. The operation was as follows. The adhesions of the pylorus were separated. There were active ulceration at the pylorus and a tight stricture. Pyloroplasty was performed, a bone bobbin being used. On July 24th, 1896, her weight was 9 stones 5 pounds and she was very much better. She had a relapse in 1898, possibly from recurrence of the ulceration. I then performed gastro-enterostomy. She was quite well in 1900 and her former weight was fully regained.

CASE 14.—The patient, a man aged 52 years, was seen on Jan. 13th, 1897. He had an ulcer of the pylorus with stricture. He had had bad health for 20 years with dyspepsia which had become worse since he had enteric fever nine years before. The last two years he had been much worse; he had pain, sickness, and vomiting from two to three hours after meals relieved by vomiting of large amounts. He never vomited blood. There was loss of flesh. His weight was 9 stones 3 pounds. There were emaciation and dilatation of the stomach. There was no tumour. An operation for the stricture of the pylorus (pyloroplasty) was performed (a bone bobbin being used). On Sept. 19th, 1898,

[6] Loc. cit.

the patient's medical attendant writes: "For some time little improvement; stomach now works well. Looks better than I have ever seen him." He was well in February, 1901, and had gained his normal weight.

CASE 15.—The patient was a woman, aged 46 years, who was seen on March 18th, 1897. She had stricture with active ulceration at the pylorus. She had had gastralgia for several years which was relieved by food. In November, 1894, she vomited a dark fluid; since then she had had frequent vomiting, the longest interval being two or three weeks. There was pain in the stomach, accompanied by a hard lump and often followed by vomiting. There was great loss of flesh and strength. Operation was as follows. Pyloroplasty for contraction and thickening of the pylorus; the passage only admitted a No. 2 catheter. Good recovery ensued and she was well in 1899. There was considerable gain in weight.

CASE 16.—The patient was a man, aged 39 years, who was seen on May 24th, 1897. A letter, dated May 13th, 1897, says: "During the last 18 months I have suffered much pain which has caused me to be bedfast for two, three, or four weeks at a time, and it has required another month or more for me to gain strength enough to move about." 18 months ago he had epigastric pain several hours after food, which was relieved by vomiting. Since then his health had never been good; three and a half months ago he had a similar attack, very severe, with collapse. The vomit contained blood. 14 days ago he had another severe attack. His normal weight was 10 stones 10 pounds; it was now 9 stones 3½ pounds. His stomach had been "weak" since childhood. There was marked dilatation. There was no tumour. On operating it was found that there was a deep ulcer at the pylorus, the extreme stricture barely admitting the ordinary director. Pyloroplasty was performed, a bone bobbin being used. There was complete recovery from operation and the patient rapidly regained normal weight. A letter dated Feb. 16th, 1898, says: "I thought you would like to know that I am able to attend business as usual, and have done so without interruption since July 19th, 1897."

CASE 17.—The patient was a woman, aged 46 years, who was seen on July 12th, 1897. She was said to have had ulcer of the stomach 20 years ago. Since then she had been subject to attacks of pain from half an hour to two hours after food and sometimes continuous pain. For three or four months she had been vomiting three times a day and had lost a stone in weight in that time. She was leading the life of an invalid and for a long period was under medical treatment without benefit. There were dilatation of the stomach, visible peristalsis, and tenderness over the stomach, especially at the pylorus. No tumour could be felt. On operating it was found that the stomach was much dilated; there was thickening at the pylorus. Pyloroplasty was performed, a bone bobbin being used. Good recovery ensued. On Jan. 8th, 1898, the patient weighed 11 stones, a gain of over two stones.

CASE 18.—The patient was a man, aged 23 years, who was seen on July 27th, 1897. He had had vomiting and loss of flesh for two years. He once weighed 10 stones, but was now seven stones in weight. Dieting and lavage gave only temporary relief. There were emaciation, pallor, and dilatation of the stomach. There was no tumour. On operating it was found that the pylorus was much contracted; there was great hypertrophy; the walls were more than one-third of an inch thick. Pyloroplasty was performed, a bone bobbin being used. Good recovery ensued. On Dec. 12th, 1897, the patient's weight was 9 stones 13 pounds and he was well.

CASE 19.—The patient was a man, aged 52 years. He had suffered from indigestion for two years. This, however, had not interfered much with his general health till the previous Christmas, when the indigestion was accompanied every second day by acute pain and vomiting, coming on about two hours after food. The vomited matter was in large quantity, offensive, and sour, and at times coffee-ground in character. From this time the patient became extremely weak and pale and rapidly lost flesh to the extent of one and a half stones in five weeks. He had pain on pressure over the pylorus, but no distinct tumour was felt. There was marked dilatation of the stomach, and during the attacks of pain it could be felt to harden under the hand. On April 8th, 1895, the abdomen was opened by an incision in the middle line above the umbilicus, exposing the pylorus, which formed a distinct tumour adherent to, and under cover of, the liver, and which, after being freed from adhesions to surrounding structures, was found to be tightly strictured, so as only to admit the passage of a No. 12 catheter, the mucous membrane being extensively ulcerated and the walls thick and almost cartilaginous. The stricture was incised longitudinally and sutured transversely over a bone bobbin by a double row of sutures. The stomach was much dilated and atonic. Though the pyloric tumour gave rise at the moment to a suspicion of cancer there was no evidence of growth and the glands were not affected. On Oct. 30th, 1896, he called to report himself, looking robust and well. He had gained three stones in weight since his operation.

Gastroplasty is an operation that I have successfully employed in a number of cases of chronic ulcer leading to hour-glass stomach. It consists in making a longitudinal incision through the strictured part of the stomach and bringing the edges of the wound together transversely, thus obliterating the stricture. A convenient method of performing the operation is by the use of a large decalcified bone bobbin as described in the cases appended. If the strictured part of the stomach be actively ulcerating the ulcer must be excised at the same time, otherwise subsequent contraction may occur; or possibly the ulcer, already chronic, may persist and lead to a continuance of the symptoms; in such a case, if excision be impracticable, gastro-enterostomy must be performed, or if the pylorus be free from disease the operation of gastro-gastrostomy may be done in order to short-circuit the constriction. I have operated on 13 cases of hour-glass stomach due to chronic ulcer, with 12 recoveries. The following are good examples.

CASE 20.—The patient, a woman, aged 29 years, gave a four years' history of ulceration of the stomach, with vomiting of blood on one occasion, and the presence of melæna several times. As the pain was always easier when the patient was lying on the back an ulcer on the anterior surface of the stomach was diagnosed. This was confirmed at the operation, as the anterior wall of the stomach was so puckered that the cavity was divided into two, which were connected by a narrow channel, which was laid open by a free longitudinal incision in which was laid a large bone bobbin, the wound being then brought together transversely over it, thus leaving a channel of nearly two inches between the two cavities. The patient went home within the month and has completely recovered her health and strength.

CASE 21.—A man, aged 44 years, was admitted with well-marked dilatation of the stomach and a history of 20 years' gastric trouble. The constriction in this case was two and a half inches from the pylorus, the cavity between the stricture and the pylorus being very much smaller than the proximal one. The treatment was by gastroplasty over a large bone bobbin. Recovery was delayed by an attack of pleurisy, but the patient was now quite well and had gained rapidly in weight.

CASE 22. *Double hour-glass contraction of the stomach; gastroplasty and gastrolysis.*—The patient was a woman, aged 30 years. There had been attacks of pain and vomiting for 15 years. The pain began at the left side and passed to the epigastrium and through to the left subscapular region. There had been severe hæmatemesis 10 years before. Occasionally, both before and since, the vomit had been streaked with blood, which was sometimes "coffee-ground," but it had contained no large quantity of blood for eight years. The patient vomited large quantities at times and had lost flesh steadily for the last five years. There were dilatation of the stomach and peristalsis. No tumour could be felt but the pylorus was felt to harden from time to time. Operation was performed on June 6th, 1899, at a surgical home in Leeds. Double hour-glass contraction was discovered. One-third of the distance from the cardiac extremity adhesions caused a marked diminution of calibre, and two inches from the pylorus a contraction only admitting the tip of the little finger was found. The adhesions were divided and gastroplasty was performed, the wound being sutured over a large bone bobbin. The after-history was as follows. The patient made an uninterrupted recovery and in two months she had gained two stones in weight.

CASE 23. *Extreme hour-glass contraction; gastroplasty.*—The patient was a woman, aged 48 years. She had had constant indigestion and flatulence for 20 years, with a feeling of pulsation and tenderness at the epigastrium. There had been free hæmatemesis two years before and vomiting occasionally since, but lately the patient had ceased to take much solid food. She had noticed slime and blood in the motions, possibly due to constipation, which was extreme. There had been great loss of flesh. No tumour

was present, but there were tenderness in the epigastrium and a well-marked splash on succussion. Operation was performed on July 28th, 1899. There was extreme contraction one-third of the way from the pylorus which just admitted the tip of the little finger. Gastroplasty was performed, a large bone bobbin being used. With regard to the after-history, the patient made a good recovery from the operation and the indigestion was relieved. There was an increase in weight of about a stone and improvement in the general health, but the stomach remained dilated and she continued anæmic and weak. This was at first thought to be due to bleeding from piles, but after they had been ligatured the weakness still continued, and, although there was no vomiting, flatulency and discomfort after meals with loss of appetite led to a suspicion of recurrence of disease in the stomach, which on being distended with CO_2 reached three inches below the umbilicus and on being washed out after a test meal showed impaired motility. On Jan. 24th, 1901, the abdomen was opened again through a median incision above the umbilicus when marked dilatation of the stomach was seen with contraction and some thickening over the pylorus, but where the hour-glass contraction had been operated on 18 months previously it was interesting to note that neither scarring nor contraction were seen and it would have been impossible to tell by naked-eye appearances that anything had been done. A posterior gastro-enterostomy was performed, a bone bobbin being employed. Recovery was uninterrupted and before the patient left the home at the end of the month she was taking ordinary food with relish and without any discomfort. She had then gained several pounds in weight.

Adhesions of the stomach to adjoining organs are so common in chronic stomach ulceration that gastrolysis or the detaching or otherwise treating bands and short adhesions to adjoining viscera or to the abdominal wall is performed in by far the greater number of cases. Such adhesions are frequently the only remnants of ulcers that have healed; at other times they have been left by perforation of the stomach wall by an ulcer, from the direful consequences of which they have saved the patient. In many cases they give rise to symptoms resembling ulcer, though the adhesions may be due to causes such as gall-stones outside the stomach itself; in such cases the operation of gastrolysis may be entirely curative. I have performed gastrolysis in 56 cases, all of which have recovered. The following case is given as an example.

CASE 24. *Gastrolysis for adhesions caused by chronic gastric ulcer.*—The patient was a woman, aged 42 years. 22 years ago she had symptoms of ulcer of the stomach; since then she had suffered from attacks of vomiting every week or two and from pain after food. During the last three years the symptoms were more marked. Under medical treatment, with rest in bed, there was no improvement. The vomit was large in quantity and fermenting, sometimes containing blood. There was loss of weight to the extent of three stones. There was great tenderness over the stomach, especially to the left. The stomach was dilated, reaching below the umbilicus and well over to the right. At the operation on the anterior surface of the stomach the scar of an old ulcer was visible. The lesser curvature of the stomach was closely adherent to the liver. The pyloric extremity and the first part of the duodenum were attached to the gall-bladder and the cystic duct. The adhesions were separated and omentum interposed between the pylorus and gall-bladder. With regard to the after history, there was perfect recovery. On March 7th, 1900, the patient could eat anything without discomfort and was rapidly putting on flesh. She had gained 20 pounds since her operation. In March, 1901, she was quite well and had gained over two stones in weight.

Many other examples could be given where the benefits derived from operation have been quite as great.

Pylorodiosis, by which name is understood the operation of stretching the pyloric sphincter, either by means of the fingers invaginating the stomach wall (when it is known as "Hahn's operation") or by digital or instrumental stretching after having made an opening into the stomach (when it is known as "Loreta's operation") is a method of little practical value in the treatment of ulcer, and in some of the cases where I performed the operation, though the immediate results were good, relapses subsequently occurred. If performed by invagination without opening the stomach cavity it is an operation unattended by risk. It may possibly be of service in simple spasm of the pylorus, but I have not much faith in its effects being lasting.

It would be easy to give from my own experience examples of operations for all the complications of gastric ulcer that I have mentioned. I will, however, now only mention the results of my experience in operations for simple diseases of the stomach out of over 200 operations that I have performed. In 56 cases I have performed gastrolysis for the separation of adhesions which were producing disabling conditions, all the patients recovering. In 13 cases I have operated for hour-glass stomach due to ulcer, 12 of the patients recovering and being now well. In six cases I have operated for hæmatemesis, with five recoveries; in four cases for fistula due to chronic ulcer, all the patients recovering. Of the 18 cases in which I have performed pyloroplasty 16 have recovered, the two deaths being in the earlier cases, one being due to perforation in the second week after operation. Of the posterior gastro-enterostomies previously referred to for simple diseases of the stomach, in 40 cases there were two deaths, both due to accidental causes, one being pneumonia in a phthisical patient. Of the anterior gastro-enterostomies, including cases operated on 10 years ago, in 19 cases there were four deaths, one from an accident at the time of separation of a Murphy's button, one from shock in a patient very exhausted at the time of operation (Senn's plates being used), one from perforation of an ulcer on the twelfth day, when apparently convalescent, and one from peritonitis extending from the abdominal wound. Of the two gastroplications both recovered. Of the three cases of pylorodiosis all recovered. In eight operations for perforating gastric ulcer there were two deaths directly following on operation in cases treated when peritonitis was general. Of the six cases in which I directly excised a gastric ulcer or ulcers after opening the stomach by gastrotomy all recovered. Of one case of gastrotomy for the removal of foreign bodies and one for perforating wound of the abdomen with hæmatemesis both patients recovered. It will be seen that out of 177 operations for simple diseases of the stomach 165 patients recovered, or 93·2 per cent.

In the course of my paper reference has been made to a method which I have been systematically pursuing since 1891, not only in stomach operations, but in nearly all the operations which involved the making of an anastomotic opening between the hollow viscera—I mean the method of suture over a decalcified bone bobbin. I have adopted it in a very large number of cases and in a great variety of operations, and as a result of this extensive experience I am more than ever convinced that it is a reliable procedure which I can thoroughly recommend to others. It is more easily demonstrated than described, but it is really very simple and only involves two continuous sutures, one of chromicised catgut to unite the mucous margins of the two openings and one of celluloid thread to unite the serous surfaces about a quarter of an inch away from the new opening. Pagenstecher's thread or spun celluloid has replaced silk in my practice, it being stronger, easily sterilised by boiling, and less absorbent. The bobbin, which is made for me by Messrs. Down Brothers of London in various sizes, from the small one required for cholecystenterostomy or for the union of the small viscera of children, to the large one employed for gastroplasty or for the end-to-end union of large intestine in the adult, is nothing more than a cylinder of decalcified bone with raised ends, which is placed in the new anastomotic opening, around which the sutures are applied.

The advantages claimed for the method are: (1) that it secures the opening being of the exact size intended and that there is no possibility of the passage being made too small by the drawing up of the sutures before the knots are tightened; (2) that it secures an immediately patent channel between the two anastomosed viscera; (3) that the bobbin protects for from 24 to 48 hours the new line of union from pressure and from the irritation of the visceral contents; (4) that it facilitates the application of the sutures and so adds to the expedition of union by sutures; (5) that no foreign material is left in the alimentary canal which may irritate or cause subsequent trouble, for the bobbin rapidly dissolves in the alimentary juices; and (6) that the method has now been proved by ample experience to be rapid, easy, efficient, and safe. For stomach operations it is used in gastro enterostomy, in pyloroplasty, in gastroplasty, and in pylorectomy or partial gastrectomy, and in the latter operation it is unnecessary to use more than two continuous sutures for the whole operation.

In adopting the method it is convenient to begin with the serous suture, which is applied around the posterior half of

the circle; the needle still threaded is then laid aside till the final stage; the openings into the viscera are then made and any redundant mucous membrane cut away; the mucous suture is now applied, uniting the posterior half of the circle; the bone bobbin is now inserted and the mucous suture continued around the anterior half-circle until it reaches the point where the mucous stitch was begun and where the loose end will be found, these two ends are then tied firmly; the serous suture previously laid aside is now picked up and continued around the anterior half-circle until the loose end of the celluloid thread is reached, when the two ends are tied firmly. The two hollow viscera are now united by a hollow cylinder of decalcified bone surrounded by two continuous threads, one uniting the mucous margins and one the serous surfaces, about a quarter or one-third of an inch away from the anastomotic opening.

Leeds.

ANALYSES OF STOOLS AND URINE FROM EPILEPTIC PATIENTS UNDER TREATMENT WITH "BROMINOL" COMPARED WITH SIMILAR SPECIMENS FROM PATIENTS UNDER POTASSIUM BROMIDE.

BY W. HARRISON MARTINDALE, PH.D.

[THE instructive investigations by Dr. W. Harrison Martindale described in the following paper were undertaken at my suggestion. I had been unable to obtain the same satisfactory results from the administration of Merck's bromipin, or the equivalent English preparation, as have been described by German observers, and it seemed desirable to ascertain whether any considerable amount of the oil-compound escaped absorption. It will be seen that the results give no support to the suspicion, and they confirm the statements made regarding the presence of bromine in the urine after the administration of the compound. The clinical observations on its influence are not yet sufficiently numerous or decisive to justify their publication. Dr. Martindale's results, however, are complete and may wisely be made known.—W. R. GOWERS.]

"Brominol" is the name given to an additive compound of bromine and sesame oil (the oil from seeds of *Sesamum orientale*, one of the cotton-seed oil group), containing 33⅓ per cent. of the halogen in chemical combination. The dose of the preparation is from 10 to 60 grains (from 0·65 to 4·0 grammes) which is approximately equal to from five to 30 grains of potassium bromide. The compound forms a thick yellow oil, odourless and of oily taste. Its specific gravity is 1·0125. A 10 per cent. preparation is also made and a quarter-ounce dose of this equals approximately 20 grains of potassium bromide.

CHEMISTRY OF HALOGENISED FATS AND OILS.

The compound is an example of a halogenised fat and as these brominised and iodised bodies have been used both externally (an iodised oil has been recommended for inunction in rheumatism) and more recently have been administered internally, by rectal injection, hypodermically, and rubbed into the skin (e.g., bromipin and iodipin, Merck) I give a short description of the chemistry of halogenised fats and oils before proceeding to the question of the relative absorption of alkaline bromides and ingestion of brominol. The reason for selecting sesame oil as a vehicle for the halogen is that it is tasteless, that it is easily digested, and that it is a cheap oil of commerce. Similar compounds may be prepared with other fats and oils, and the resulting products—e.g., brominised cacao butter and lard—differ little in physical characters from the fats from which they are prepared.

Fats and oils are mixtures of the neutral glycerides of acids of the higher homologues of the paraffin, of acids of the oleic (acrylic) and linoleic (propiolic or sorbinic) series. The acids of the first-mentioned and their glycerides are saturated bodies having in their molecule a single linkage throughout, and therefore do not possess the power of adding halogen. The bodies of the next (the oleic) series are derived from hydrocarbons of the ethylene group, unsaturated, and by reason of their double linkage add bromine or iodine; the double linkage is broken with the result that di-halogen-substitution products of the corresponding acids of the paraffin series are formed, e.g.:—

$$C^{18}H^{34}O^2 + 2\,Br = C^{18}H^{34}Br^2O^2$$

Oleic acid. Di-bromo-stearic acid.

Finally, the acids of the linoleic type and their glycerides are derived from hydrocarbons of the acetylene series, contain either a triple or two double linkages and are capable of adding either two or four atoms of halogen, e.g.:—

$$C^{18}H^{32}O^2 + 4\,Br = C^{18}H^{32}Br^4O^2$$

Linoleic acid. Tetra-bromo-stearic acid.

It is thus evident that in choosing an oil for internal administration of a considerable quantity of bromine or iodine in chemical combination one containing a large proportion of acids of the paraffin series (e.g., palmitic or stearic acids) is not suitable, and, on the other hand, the fats of the linoleic group, though absorbing a considerable quantity of halogen, are unsuited (e.g., linseed oil) by their unpalatability or are not general articles of commerce. In the case of iodine absorptions it is necessary to use some aid to induce addition, as when employed alone the interaction is slow. For this purpose the compound iodine-chloride or iodine in an alcoholic solution of mercuric chloride yield good results. Mills found that sesame oil would absorb 47·4 per cent. of bromine, while sweet almond oil would absorb 53·7 per cent., cotton-seed oil 50 per cent., raw linseed oil 76 per cent., boiled linseed oil 102·4 per cent., and cod-liver oil from 81·6 to 86·7 per cent. Olive oil assimilated 54 per cent. of bromine against the theoretical amount (54·3 per cent.) required for the compound $C^3H^5(C^{18}H^{33}Br^2O^2)^3$.—(Allen.) Figures thus obtained are analytical data and in halogenising on the large scale allowances have to be made in order to ensure complete combination. In the case of iodine these percentages constitute the "iodine number" of the fat or oil and form a valuable aid to the identification and detection of substitutes in the olive oil of commerce.

PREPARATION OF BROMINOL.

Brominol is prepared by the action of bromine-monochloride in alcoholic solution on sesame oil or by the action of ethereal solution of bromine itself on ethereal solution of sesame oil. Considerable heat is produced unless due precautions in cooling are taken. The bromine fumes necessitate working in the open air or in a draught-chamber. In the manufacture small quantities of acrolein and hydrobromic acid are produced. It is therefore necessary thoroughly to wash the brominised oil with repeated quantities of warm alcohol to remove these impurities. Finally, the product is dried to remove the alcohol by heating in vacuo and the strength in bromine is determined by a Carius's analysis if direct combination has been employed or by other suitable method if the bromine-chlorine compound has been used. The bromine is in slight excess to commence with and after its determination the product is adjusted by the addition of sesame oil so as to contain 33⅓ per cent.

Chloroform may also be used in the place of ether for solution. Mixtures producing bromine-chloride—e.g., potassium bromide, sodium nitrite, and hydrochloric acid, or a mixture of potassium bromide with a chlorate—are also mentioned in Merck's specification of the German patent "bromipin" as being utilised for brominising, but these bodies are obviously unnecessary complications.

ANALYTICAL DATA.

At the suggestion of Sir William R. Gowers I have undertaken investigations with a view to determining whether this halogenised oil, brominol, passes through the system unchanged or whether it is absorbed. According to Merck's Report the compound "bromipin" is acted upon by the pancreatic secretion and the bile, split up, and is absorbed in the intestine.

Dr. H. Douglas Singer, house physician at the National Hospital for the Paralysed and Epileptic, Queen square, has kindly forwarded me specimens of stools and urine for examination in order that a comparison might be made between relative proportions of bromine in these excreta from epileptic patients under treatment with brominol and with potassium bromide respectively. The stools of patients under

brominol were carefully desiccated on the water-bath and the dried substance was powdered and passed through a fine sieve. The resulting powder was then extracted with ether of a specific gravity of 0·720 in a Soxhlet apparatus for a day or more until the liquid passed over colourless. The ether was distilled off and the residue in the flask was carefully dried and weighed. This was examined for bromine by fusing with dried sodium carbonate or with a fusing mixture of potassium nitrate and sodium carbonate. The fused mass thus obtained was dissolved in nitric acid and examined for bromide with silver nitrate, and with carbon disulphide and chlorine water. The residue in the Soxhlet thimble was then examined for bromine (in the form of bromide) by fusing in a similar way and testing as above.

The stools from patients under potassium bromide would not be expected to contain bromine in an ether soluble (fat) form in the fæces, but it seemed desirable to dry and extract these also with ether alongside the above in order to confirm the results and compare the amount of fats obtained in the two treatments respectively.

The bulk of the urine from patients under both treatments was evaporated as nearly as possible to dryness on a water-bath, and small quantities of the residue were fused with sodium carbonate and potassium nitrate, and preliminary qualitative examinations for bromine conducted as before. The quantitative determination of the halogen presented some difficulty, owing to the natural presence of a considerable quantity of chlorides. A method was initially adopted of treating the fuse obtained from a weighed quantity of the residue with strong sulphuric acid in a separator, adding chloroform and excess of potassium permanganate, and shaking out the liberated bromine. It is important that the chloroform should already be present when the bromine is liberated by the permanganate. This chloroformic solution was added to an excess of alcoholic potassium iodide, and the bromine in turn liberated an equivalent of iodine which was finally titrated with $\frac{N}{10}$ thiosulphate. From the amount of thiosulphate used it is an easy matter to calculate the amount of bromine in the quantity of urine residue taken for analysis, and thus by multiplication to arrive at the bromine content in the volume of urine—e.g., in the amount voided in 24 hours.

Another method employed was to precipitate the halogens as silver salts from the nitric acid solution of a weighed quantity of fuse. The silver salts (bromide and chloride) were weighed and heated in a stream of chlorine. From the loss in weight due to the displacement of the bromine by chlorine the proportion of bromine present may be found and calculated into the equivalent contained in the urine passed in 24 hours. The results are tabulated.

potassium nitrate, incinerated and the bromine estimated by the chlorine method, gave 0·151 gramme AgBr = 0·064 gramme of bromine, or 0·72 gramme of bromine, from 1120 grammes of sample. 140 grammes of Specimen D, treated similarly, yielded 0·288 gramme AgBr = 0·122 gramme of bromine, or 0·98 gramme of bromine, from 1120 grammes of the specimen. These figures, though not as accurate as the data in the table, nevertheless confirmed the latter.

NOTES ON THE CASES UNDER TREATMENT.

A. Stool from patient, a female, aged 32 years, under treatment with brominol (33⅓ per cent.) one drachm every six hours. Time of passing stool, April 4th, 10.30 A.M.; time of previous stool, April 2nd, 10 A.M.

B. Urine from the same patient under brominol treatment, collected during the 24 hours from March 21st, at 7 A.M., to March 22nd, at 7 A.M.

C. Stool from a male patient, aged 24 years, under treatment with potassium bromide (30 grains ter in die). The stool was passed on March 22nd, at 8.30 A.M. The bowels had been previously opened on March 21st, at 8.30 A.M. This patient had before (up to March 11th) been under treatment with brominol.

D. Urine from the same patient as last specimen, collected during the 24 hours between March 21st, at 8.30 A.M., and March 22nd, at 8.30 A.M.

By a glance at the table of analyses it will be seen that we are able to account in the urine, in both the brominol and potassium bromide treatments, for somewhat more than one-quarter of the quantity of bromine administered in the day. Taking Analysis 2 of Specimen B into account it is seen that three-eighths of the total quantity of bromine administered passes off in the urine (one drachm of 33⅓ per cent. brominol four times daily = 80 grains of bromine). In the brominol treatment small quantities of unaltered brominol and bromides are passed per rectum. Other portions may pass off by the skin or lungs.

The exact manner in which assimilation takes place is not easy to decide. In an experimental research by Moore and Parker[1] it is concluded that "in the property of acting as a solvent for substances insoluble in water bile has its main if not its only function, both in excretion and absorption ..... this clearly explains the part played by bile in fat absorption." These workers' results, amongst other valuable and interesting data, throw light "on the relative functions of the pancreatic juice and bile in fat digestion and absorption. The enzyme of the pancreatic juice splits up the neutral fats, forming free fatty acids, which are largely converted into soaps by the alkali present, while the bile gives solubility to the fatty acids and soaps so produced."

The digestion and absorption of brominol may be explained

Specimens.	Nature of material.	Case under—	Weight of material in grammes.	Weight of residue on drying.	Residue per cent.	Extractive with ether.	Bromine in residue (after ether extraction in the case of stools).
A	Stool.	Brominol 33⅓ per cent. one drachm sextis horis (four times in 24 hours).	161	43 grammes.	26·7	8·9 per cent. of original material contained decided traces of bromine.	Traces.
B	Urine.		1120	19 grammes.	1·7	—	Analysis 1: 0·6 gramme of bromine from total material = 1·8 grammes (27 grains approximately), 33⅓ per cent. of bromine. Analysis 2: 0·7 gramme of bromine from entire material = 2·1 grammes (31 grains approximately), 33⅓ per cent. of brominol.
C	Stool.	Potassium bromide, 30 grains ter die.	85·05	30 grammes.	35·3	6·4 per cent. of original material. Contained no bromine.	*Nil.*
D	Urine.		1120	28·9 grammes.	2·6	—	Analysis 1: 1·12 grammes of bromine from total material = 1·67 grammes (25 grains approximately) of potassium bromide. Analysis 2: 1·1 grammes of bromine from total material = 1·64 grammes (25 grains approximately) of potassium bromide.

Having by me at the conclusion of these analyses small quantities of the Specimens B and D, which I had reserved as *corpus delicti*, I decided for final confirmation to examine these also for bromine content. The results were as follows: 100 grammes of Specimen B, evaporated to dryness with

by the principles indicated by these authorities—namely, that the pancreatic enzyme splits up the compound, forming

[1] Communicated to the Proceedings of the Royal Society, vol. lxviii., No. 443, by Professor Schäfer.

free fatty acids, which are to a large extent saponified by the alkali present, and the bromine is by the same agency converted into alkaline bromide. The bile then causes solution of this saponified mass of soap, fatty acid, and alkaline bromide, the latter by its easy solubility passing off in the urine. Considering the close combination of the bromine atoms in the molecules of the fatty acids and the general stability of the compound brominol it is remarkable from a chemical aspect that the halogen is absorbed to the extent to which analyses of the urine show to be the case. It may be put forward that the work to be done by the bile and tissues in converting the bromine into this soluble form is probably advantageous in producing its necessary effect in nerve trouble.

In conclusion, I consider that these halogenised fats deserve a more extended trial because I think that it may be argued that in some cases this ingestion may prove of benefit where the alkaline bromide by reason of its great solubility would pass off rapidly without producing its full action.

New Cavendish-street, W.

TWO CASES OF CARCINOMA TREATED WITH CACODYLATE OF SODA.

BY EDWARD MARTEN PAYNE, M.B., C.M. ABERD.

THE idea of treating cancer with arsenic is not new. There was a story told of a German countess who, being stricken with the complaint, was so horrified that she determined to forestall a lingering and painful death by taking a large dose of arsenic which, however, instead of killing the countess, cured the cancer.

CASE 1.—On Jan. 14th, 1900, I was consulted by a patient, aged about 45 years, relative to irregular and rather profuse discharges of blood from the vagina. She attributed the occurrence to the "change of life," and as she objected to a physical examination I prescribed a mixture of ergot and sulphuric acid, which stopped the floodings for the time being. On April 17th I was consulted again and this time I made a vaginal examination but found no very definite signs except a certain amount of purulent discharge, from which the patient said she had suffered for a long time. The ergot and sulphuric acid mixture was again prescribed and the patient was better in two days. On June 13th I find she had another bottle of the mixture, but she did not consult me again until August 14th. She would not be examined, so I prescribed the old mixture and she went away to the seaside. On Oct. 5th I received an urgent message to go to see her at her own house. She had had a very severe attack of hæmorrhage while she was in the country and a medical man who had been called in had told her that she had cancer of the womb and had not long to live. This time I insisted upon making an examination and I found that the cervix was ulcerated and that there was fixation of the uterus. As the patient and her friends were extremely unwilling to believe that the disease was of a malignant nature I, after a good deal of difficulty and delay, persuaded them to let me call in a well-known gynæcologist who confirmed the diagnosis and who said that operative methods would be useless. This was on Nov. 29th. For the sake of doing something I had already been treating the case with Fowler's solution, and on Dec. 16th I commenced hypodermic injections of cacodylate of soda. On the first day I injected two centigrammes, on the next four centigrammes, and on the next five centigrammes, and I kept up the last-named dose daily until Jan. 16th, 1901, when I increased the daily dose up to 7·5 centigrammes, which was the maximum dose that I employed in this case. The injections were continued daily, with occasional intermissions, until Feb. 25th, when the patient got so tired of the needle that at her earnest request I let her have a mixture containing the drug in doses of 2·5 centigrammes which she took three times a day until March 14th, when for some reason or other she suddenly refused to go on with the treatment.

As to the results, unfortunately I could never get my patient to let me make another vaginal examination, so I was obliged to form my conclusions on other data. As to the general state of the patient's health she and all her friends agreed that there was a great improvement. She left her bed and took walks out of doors, and even travelled all the way from the distant suburb where she lived to look at the shops in Regent-street. Her colour improved. She wore close-fitting dresses which had been made for her a year ago and they fitted her exactly still. She gained weight, as much as two pounds in three weeks. The hæmorrhage ceased and the white discharge diminished. When the patient was at her work she had complained much of constipation which I believed to be due to pressure of the tumour on the rectum. This condition also became very much improved. In short, the patient herself got so much better that she finally declared that she could never have had cancer, and this was her excuse for giving up the treatment.

CASE 2.—The next case I shall describe is one of an old man, aged about 70 years. On August 2nd, 1900, he complained of a sore mouth and tongue. The tongue was a little ulcerated. There were several jagged old teeth and stumps which were thought to be the offenders, the tongue was a little swollen generally, but there was no localised swelling. A mouth-wash was supplied and after some persuasion two teeth were extracted on Sept. 10th and another one on Nov. 24th. There were no more complaints about the mouth until March 14th, 1901, when the patient told me that he felt as if he had a hole in the middle of the tongue. On examination it was found that there was a deep depression in the middle of the upper surface of the organ, and immediately beneath the depression was a hard substance of about the size of a large filbert. I suspected carcinoma, so I made known to the friends of the patient my apprehension and suggested that a specialist should be consulted. They did not care to have a specialist, but my partner, Dr. Whitehall Cooke, kindly came and after examining the patient he expressed his conviction that the case was one of carcinoma. We both agreed that considering the patient's age an operation was not advisable. On March 17th I commenced hypodermic injections of cacodylate of soda, beginning with a small dose and gradually increasing it to 7·5 centigrammes. From the first the patient said that he felt much better in himself and at the present time, after about six weeks' treatment, I am sure the swelling under the tongue is no larger; indeed, I think that it is less and that the surface of the tongue is less retracted. There is less soreness of the gums but it is not always absent. On one occasion I noticed that some of the lymphatic glands in the neck were swollen but the swelling subsided in a few days. On the outer surface of the inferior maxillary bone about the region of the left incisive fossa a swelling appeared about the time the treatment was commenced; this also has subsided somewhat.

I have given the above notes for what they may be worth, for although I fear that I cannot claim that the results I have recorded are of a very decisive nature I am myself strongly inclined to the opinion that cacodylate of soda, even if it cannot claim to be a *cure* for the cancer, is at least a very valuable palliative. It certainly seems to arrest the progress of the disease and it improves the patient's general condition, and I am of opinion that it should at least be tried in those cases where early operative methods are out of the question.

I have a theory of my own as to how arsenic acts in cases of cancer. It is well known that arsenic, which is so much prescribed in "skin diseases," has, if pushed too far, a deleterious effect on that organ. An excellent series of cases bearing on this subject is given by Mr. J. Hutchinson in the *Polyclinic*.[1] Amongst these several cases are recited in which the continuous use of the drug has been said to produce cancer and cancerous ulcers, or, at any rate, growths and ulcers, which appeared to be morphologically identical with cancer when examined under the microscope. Now in view of the theory which has of late years been revived and is at the present time in growing favour with pathologists—viz., that cancer is due to the irritation of the epithelial cells by a specific micro-organism—may we not fairly question whether, after all, these growths and ulcers which have been attributed to the effect of arsenic are really pathologically identical with the growths and ulcers known as cancers? If cancer be due to the irritation of the epithelial cells by a specific organism then these ulcers and growths either are not cancerous or if they are they are not due to the arsenic but occur coincidently only with its administration, unless, indeed, it be maintained

[1] Vol. iv., p. 44.

that the arsenic acts as a secondary or exciting cause by which the dormant energies of the latent micro-organism are stimulated to action. Now there are so many of these cases quoted that it does not seem probable that the appearance of these cancers is purely coincidental, although it might happen that the cancer was the ultimate manifestation of an abnormal condition of the epithelial cells which at first showed itself in the shape of the psoriasis or whatever it was that was the primary object of treatment. The theory that the arsenic stimulates the dormant organisms into a state of activity seems too far-fetched to be accepted without further evidence, so we are thrown back upon one or the other of the following suppositions—viz., that the growths and ulcers following excessive doses of arsenic are *not* truly cancerous but are pathologically distinct although morphologically similar; or that cancer is a growth having a certain morphological structure pathologically due to some epithelial irritant and that amongst such irritants arsenic is one. In any case it seems certain that arsenic has a specific action on the epithelial cells, at first beneficial, ultimately destructive. It also seems to be a plausible theory that on coming in contact with the epithelial cells in a person suffering from cancer its deleterious effects would be resisted more vigorously by the normal physiological cells, while pathological cancerous cells would be the first to be overcome and destroyed.

Cricklewood, N.W.

ACUTE COLITIS IN CHILDREN.[1]

BY EDMUND CAUTLEY, M.D. CANTAB., &c.,
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IT is a remarkable fact that the occurrence of acute colitis, or ileo-colitis, in epidemic form is almost unknown, or at any rate unrecorded, in England. Even in America, where diarrhœal affections in children are more common and more severe during the hot season than in England, the disease does not appear to have attracted attention as an epidemic. A small but very definite outbreak has recently come under my observation and is well worthy of publication. Six out of 30 children were affected and of these patients four died. Four of them came under my care, two of whom died. Three out of 13 adult women were attacked less severely and recovered. The first case I saw in consultation with Mr. D. Boyd Keown who kindly agreed to transfer the child to the Belgrave Hospital for Children for treatment and has since supplied me with the following particulars of the epidemic.

Habitation.—All the cases broke out in certain London barracks, in rooms opening on to a common staircase. On this particular staircase there are four floors with four rooms on each floor. 13 families, consisting of 13 women and 30 children, occupied these 16 rooms, three of the larger families having two rooms apiece. On the third floor lived three women with two, two, and five children respectively. The first case broke out on this floor on June 20th, 1900, and the second on June 30th. Two out of the family of five children were affected and both died (Case 1 and Case 2). On the second floor lived three women, one of whom had four children. No case occurred on this floor. On the first floor lived three women, one of whom had four children, another had five children, while the third had none. The last cases broke out here at the beginning of August. The mother of five and two of her children were attacked and one of the children died. On the ground floor lived four women with three, three, two, and no children respectively. The family of the mother and two children were all affected, the first on July 14th, and of these the younger child died. One of the women with three children was attacked, but not severely, and her children escaped. Thus the epidemic started on the top floor, then broke out on the ground floor, and finally on the first floor.

Etiology.—As far as could be ascertained by personal inspection no fault could be found with the water-supply, the lavatory accommodation, or the drainage inside the building. Just outside the entrance a pipe, carrying the rain-water from the roof, opened into a gully from which the grating had been removed. This gully was frequently full of stagnant offensive water, and in one instance (Case 3) the child had been noticed putting her hands in the water and then in her mouth. It must, however, be pointed out that other children living on adjacent staircases had access to this water and that the outbreak was limited to the one staircase. The milk-supply for the families affected came from two different milkmen. The food-supplies were bought outside the barracks. A very careful investigation by Mr. Keown and myself did not enable us to ascertain what the source of infection had been. Although the cases occurred during the hot months of the year the weather was colder than usual at the time.

The following are short details of the four cases which came under my charge.

CASE 1.—A girl, aged five years, was admitted into the Belgrave Hospital for Children on June 28th, 1900, and she died on July 1st. On June 22nd the family had some fried mackerel of which the child partook. Vomiting and diarrhœa began at 4 A.M. next day and persisted in spite of treatment. On admission the child was very ill and cold and wasted; the temperature was normal and the pulse was 140. Nothing abnormal was found on physical examination. The abdomen was lax and empty and it was nowhere tender. Vomiting continued. The diarrhœa was profuse as regards frequency, 20 stools being passed on the 29th and 14 on the next day. The stools were small, sometimes not more than a tablespoonful at a time, green, containing mucus and blood, and very offensive. There did not appear to be any pain or tenesmus, though there was a history indicating a certain degree of tenesmus. The child rapidly got weaker and she died from exhaustion at 2.25 A.M. on July 1st. The temperature reached 101° F. a few hours before death.

CASE 2.—A boy, aged three years, was admitted to the hospital on July 1st, 1900, and he died on the 8th. The patient was brother of the first child and they had slept in the same bed. He was quite well until the afternoon of June 30th and was a fine, strong, well-nourished boy. Illness began with abdominal pain, vomiting, and diarrhœa. On admission his temperature was 103° F., the pulse being 144 and the respirations 36. Nothing abnormal was found on physical examination. Possibly the abdomen was a little distended, but there was no tenderness. The course and symptoms were the same as in the first case. The stools numbered from 11 to 20 in the 24 hours; they were small and green, containing bright red blood, mucus, and a little fæcal matter, and were very offensive. Vomiting was troublesome and persistent. On the day before death he brought up some blood. He took food badly, was very restless, and he died from exhaustion. No other cases occurred in this family. Temperatures were taken every four hours, the highest and lowest readings Fahrenheit for each day being as follows:—July 1st: highest 103°; lowest, 98·8°. July 2nd: highest, 101·4°; lowest, 98°. July 3rd: highest, 100·8°; lowest, 98·8°. July 4th: highest, 100·8°; lowest, 98·2°. July 5th: highest, 101°; lowest, 98·2°. July 6th: highest, 100·2°; lowest, 97·4°. July 7th: highest, 99·8°; lowest, 97·2°.

CASE 3.—A female infant, aged two years, was admitted into the hospital on July 18th, 1900, and was discharged cured on August 27th. She was the elder of two, the other being a baby at the breast. It could not be ascertained that the illness was due to any deleterious article of diet, but on July 13th, the day preceding the onset, the child was noticed putting her hands into the dirty water previously mentioned and then into her mouth. On the 14th she was languid and had diarrhœa. In the evening she vomited after taking medicine and she had a little colic. Next day the vomiting was continuous and the diarrhœa was worse, with a large amount of blood in the stools. The hæmorrhage was severe on the following day and then it diminished, more mucus being passed. On admission she had a temperature of 101° F., was well-nourished, and presented a moderate degree of abdominal distension, without pain or tenderness. The fever lasted for a fortnight; it was rarely up to 100° F. Vomiting ceased on the 20th. The diarrhœa persisted for a fortnight, the stools becoming less frequent and more fæcal. They were never as numerous as in the first two cases, 12 being the maximum number in the 24 hours. At first they presented the usual characteristics and were very green. No blood was seen after the 31st and no mucus after a few more days. The stools were unformed and offensive for a further 10 days and after that they became normal. At first the child was very ill, lethargic, and fed badly, but she improved

[1] A paper read before the Medical Society of London on May 13th, 1901.

steadily with the cessation of the diarrhœa. Otitis media occurred as a complication. Soon after this child was taken ill and before she was transferred to the hospital the infant, aged three months and entirely breast-fed, was similarly attacked. She died after two weeks' illness, characterised by pyrexia and diarrhœa, the stools being green and containing blood and slime. After the baby the mother was attacked and she passed blood in her stools for four days. Another adult woman living on this floor was also affected but less severely. She had three children who escaped.

CASE 4.—A male child, age three years, was admitted into the hospital on August 11th and was discharged cured on Sept. 17th, 1900. He was one of five children living on the first floor. This proved to be the mildest case of the series. The patient was taken ill on the 8th, and when admitted he did not seem very ill. His tongue was clean; the temperature was 100° F., and the pulse was 130. The stools were offensive and they contained blood and mucus. The vomiting and characteristic stools persisted for a week, but the stools never exceeded four in the 24 hours. Pyrexia was slight for four days. After a week recovery was steady and uneventful though slow. A brother of this patient was similarly affected, his illness beginning a week before the patient was attacked. He was admitted into another hospital and there he died. The mother was also severely attacked and was in bed for a week.

Morbid anatomy.—In the first case it was found that the whole of the large intestine, from the cæcum to the anus, was enormously thickened, so much so as to form an almost rigid tube. The thickening involved the whole wall, but it especially affected the mucous membrane. On the surface of the latter were some superficial minute abrasions, hardly sufficient to call ulcers, and small hæmorrhages. The last few inches of the ileum were acutely inflamed, but little if at all thickened. There was another small patch of inflammation in the ileum higher up. The mesenteric glands were swollen and one bronchial gland was caseous. Nothing else of importance was found. The second case presented somewhat similar appearances. The acutely inflammatory condition of the whole of the large intestine was present as well as considerable thickening, but there was not the enormous thickening found in the first case. For quite two feet the lower end of the ileum continuous with the cæcum was acutely inflamed, and a patch of similar inflammation about six inches long was found in the ileum higher up. On the surface of the inflamed mucous membranes were small hæmorrhages and superficial abrasions, but no definite ulceration. In both of these cases the total duration of the illness was almost identical, but in the first the effect on the large intestine was much more severe than it was in the second. In both the main stress of the attack fell on the large intestine, the amount of inflammation in the ileum being in comparison of quite minor importance.

Nomenclature.—A certain amount of criticism may be directed to the name which I have given to this disease. That it deserves a special name must, I think, be conceded in view of the characteristic symptoms, course, and morbid anatomy. It must, however, be pointed out that cases of this description are generally included in that group of diseases described under the names zymotic diarrhœa, inflammatory diarrhœa, enteritis, entero-colitis, ileo-colitis, and dysentery or dysenteric diarrhœa. If one name be taken to include the whole of this group of diarrhœal diseases that of "ileo-colitis" is apparently the most appropriate, for in the large majority of the cases there is present some degree of inflammation of the ileum. It appears to me that the time has come to differentiate these affections. In ileo-colitis, as described in the text-books, it is usually stated that in only about half the cases is the ileum involved. Surely, then, many of these cases can be more appropriately classified under the name "colitis." The morbid anatomy of the two fatal cases showed distinctly that the main stress of the pathological process fell upon the large intestine. In fact, in the first case the effect on the large intestine was so striking as to suggest the name of "acute proliferative colitis" for the disease. The second case would come more satisfactorily under the heading of "acute catarrhal colitis." On the whole, I am of the opinion that this latter name is the more suitable one for the cases in this small outbreak. There is more than a superficial change in the epithelium such as occurs in ordinary gastro enteric infection. According to the nature and extent of the change a further differentiation can be made. Thus acute catarrhal colitis may occur with or without ulceration; or a follicular colitis may occur, and further a pseudo-membranous form has been described.

General description.—There is very little doubt that the cause of the disease is some form of microbial infection or toxæmia, almost certainly the former. The actual variety of micro-organism responsible has not been definitely ascertained either in these cases or in others which have been investigated. In Case 2 Dr. F. W. Andrewes found the bacillus enteritidis sporogenes and the bacillus coli communis, but could not definitely ascribe the disease to either organism. Streptococci were found by Booker in the deeper lesions in some cases which occurred in America. In a few others, which were no doubt true dysentery, the amœba coli was found by Cahn. Although the disease is most common in hot weather, it may occur at any season of the year. Sometimes it is secondary to infectious diseases such as measles, diphtheria, and some forms of broncho pneumonia. Ulceration of the colon may also result from enteric fever and dysentery, and is occasionally due to tuberculous or malignant disease. The disease under consideration is most frequent in infants under two years of age; in fact, a certain amount of catarrhal or follicular colitis is not uncommon in fatal cases of inflammatory diarrhœa in infants at this period of life. It is noteworthy that in the present outbreak only one infant under two years of age—viz., a breast-fed infant three months old—was affected; that the age of the other children varied from two to five years; and that three adults were attacked. Proportionately, the percentage of adults attacked was as great as that of the children. Probably the primary source of the infection was some article of food or drink. In some instances it appears likely that the disease was acquired by direct infection from a previous case, perhaps from a lack of absolute cleanliness while attending to the invalid. Thus, the second case may have been acquired by infection from the first through sleeping in the same bed, which was undoubtedly contaminated by the fæcal discharges. Also, the mother in the third case was attacked subsequently to her children, and, seeing that the stools of the child first ill were frequent and offensive and that she was nursed for some days by the mother, direct infection is a likely explanation. Moreover, the young child was entirely breast-fed and did not have even water in addition to the mother's milk.

Symptomatology and course.—In each case the onset was sudden, with vomiting, diarrhœa, and pyrexia. Vomiting is a most pronounced symptom being frequent and persistent, varying in severity in different cases. It is not due to any affection of the stomach and is most probably dependent on reflex irritation, though possibly it is caused by a toxin acting on the nervous centres. Anorexia is complete and, like the vomiting, is independent of gastric conditions. The tongue in one of the milder cases remained clean throughout, but in the others it was somewhat furred and it tended to become dry and brown in the centre. The stools are very frequent, small, green, very offensive, and contain mucus and bright red blood and little or no fæcal matter. Although frequent the diarrhœa is not profuse, the stools being sometimes only about half an ounce in amount. There is no marked tenesmus. It was noted in the first case as present but as being slight, and was absent in the other three cases. The abdomen may be retracted and empty or it may be moderately distended. In no instance was any tenderness discoverable along the course of the colon. The facial aspect is of the abdominal type—sunken eyes, pallor, and an anxious look. Restlessness is a marked symptom and there is very considerable nervous prostration, quite out of proportion to the amount of diarrhœa and very suggestive of a general toxæmia. The character of the pyrexia is well illustrated by the temperature record of Case 2. In the fatal cases the vomiting, diarrhœa, restlessness, and fever persist in spite of treatment and death results from the rapidly increasing asthenia, which seems to be due largely to the effect of the poison on the nervous system and by no means to the severity of the diarrhœa. In a more favourable case the tongue, if furred, rapidly cleans; the blood disappears from the stools, the mucus next lessens, and the amount of fæcal matter increases, the stools becoming less frequent. The stools retain their offensive odour for some days after the diarrhœa ceases and even when the motions are solid. With the cessation of the diarrhœa the pyrexia subsides.

Prognosis.—The prognosis is bad in the acute cases. Although five out of six of the children were over two

years of age, no less than three of them died. The indications on which I lay most stress as being of serious import are vomiting, uncontrolled by drugs and diet, and restlessness. The frequency of the stools and the persistence of blood and mucus in them are also indicative of the severity of the attacks.

Treatment.—The treatment must be directed to maintaining the strength of the patient and stopping the diarrhœa and vomiting. Warmth and rest in bed are essential. Diet is all-important, for in face of the complete anorexia and vomiting it is extremely difficult to get the child to retain sufficient food. Thin arrowroot made with water is retained fairly well. Other foods of value are albumin-water, meat juice, peptonised milk, milk diluted with a thin farinaceous fluid, and unsweetened condensed milk. In the worst cases nothing is retained long, the vomiting being due to reflex irritation or toxæmia and not to any gastric cause or the nature of the food. Stimulants are essential and may be used freely. Brandy is the best. Of drugs I found hydrochlorate of cocaine (in doses of one-hundredth of a grain) the most useful to stop the vomiting, and salicylate of bismuth in large doses for the diarrhœa. Other drugs were tried, but the above gave the best results. Urotropine was given with a view to disinfecting the alimentary canal but it exerted no influence on the offensive character of the stools. Opium by the mouth did not seem to be beneficial, and enemata of starch and opium were only of slight value. Rectal irrigation was tried in one case unsuccessfully. Theoretically irrigation of the large intestine would be beneficial by washing out mucus, micro-organisms, and other deleterious matters present. Practically it is very difficult to carry out efficiently in children and is strongly objected to. In view of the fact that the pathological process is more than a superficial one irrigation is unlikely to be of any great benefit. If used, a weak solution of boric acid is the best. Silver nitrate should not be employed.

PATHOLOGICAL REPORT ON CASE 2, BY DR. F. W. ANDREWES.

The only organisms isolated were the bacillus enteritidis sporogenes and the bacillus coli communis. The former was obtained from the colon in anaerobic milk culture after heating to 80° C. for 10 minutes. It was virulent on a guinea-pig. The latter came out in almost pure culture in aerobic cultures on gelatin and agar-agar. Its virulence was not tested, but various chemical tests were applied and they showed that it was the ordinary bacillus coli communis and not Gärtner's bacillus enteritidis.

Microscopical examination.—The contents of the colon, stained with methylene blue and Gram's method, show a vast number of micro-organisms of very various kinds of which short bacilli, resembling bacillus coli communis, are the most abundant. Very few streptococci can be recognised. Sections of the colon show a high degree of congestion. The mucous membrane is ulcerated away in many places, exposing the submucosa but not the muscular coat. At such places especially there is an infiltration with round cells, but this does not involve the muscular coat. The epithelium of the colon is desquamated in many places, including Lieberkühn's crypts. The submucosa, on the whole, shows very little infiltration, except where actually laid bare by ulceration. Sections stained for micro-organisms show plenty on the surface of the mucous membrane and in the crypts, but they do not extend deeply into the mucous membrane. They are chiefly bacilli resembling the bacillus coli communis.

Upper Brook-street, W.

PRESENTATIONS TO MEDICAL MEN.—Mr A. B. Pugh, for some time house surgeon of the Huntingdon County Hospital, on his leaving the neighbourhood has been the recipient of a travelling clock, subscribed for by 150 people of Godmanchester and Huntingdon, in recognition of his kind attention and medical skill.—At a meeting held at the Westminster Palace Hotel on May 15th Mr. E. L. Jacob, M.R.C.S. Eng., who has recently resigned the office of medical officer of health of the Surrey United Sanitary District, after 27 years' active service, was presented with a silver tea and coffee service by the gentlemen with whom his official work brought him into close association. The county treasurer, Mr. Francis H. Beaumont, of Buckland Court, Betchworth, presided. The meeting was well attended and comprised a large number of professional brethren and officials.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF RUPTURED INFERIOR VENA CAVA: VITALITY AFTER SEVERE INJURY.

BY ADRIAN CADDY, M.B. LOND.,
HOUSE PHYSICIAN, ROYAL FREE HOSPITAL.

A BOY, aged eight years, was brought to the casualty room of the Royal Free Hospital on Feb. 28th, 1901, with a history of being run over by a dustcart. The first thing we noticed was a large lacerated wound on the outer side of the right knee-joint, with a tear in the capsule of the joint. The left knee-joint had a worse wound about three inches square on the inner side completely denuding the bone and exposing the semilunar cartilage which was quite loose between the femur and tibia. The boy, when first seen, did not appear to be much hurt and sat up and talked freely about a pain in his left side. On examining his thorax the majority of his ribs seemed to be fractured. He then gradually got worse, becoming very pale, with a pulse of 140 and very thirsty. He gradually became unconscious, and finally died two and a half hours after admission. At the necropsy extensive bruising was found all over the front of the thorax. The left ventricle of the heart had a large bruise on its anterior surface. There was a pint of blood in the left pleural cavity, there was a laceration of the base of the lung two inches long, and there were seven fractured ribs on the left side. On the right side six ribs were fractured and there were four ounces of blood in the right pleural cavity. In the abdomen the inferior vena cava was discovered completely torn across; there was no rupture of the liver or injury to the diaphragm, the tear in the vein being between the liver and diaphragm. There were 12 ounces of blood in the peritoneal cavity and a slight bruise of the transverse colon. All the other organs were uninjured and healthy.

The interest of this case lies in the fact of the boy's power of living after such extensive injuries for two and a half hours, excluding the time required to bring him to hospital (20 minutes), the injuries including the rupture of the largest systemic vein of the body, laceration of the lung, and bruising of the left ventricle of the heart.

A RARE CAUSE OF SUDDEN DEATH.

BY G. HERBERT METCALFE, M.R.C.S. ENG., L.R.C.P. LOND.

I WAS sent for on the evening of Feb. 16th, 1901, to see a girl, aged 13 years. On my arrival I found that she was dead, apparently asphyxiated. I was given the following history. The patient had been quite well for the last year with the exception of a slight cough after food or on exertion for the last three days. Five minutes before my arrival she started to run upstairs sucking an orange, but suddenly returned to the room gasping for breath and fell back dead. Three years previously I had attended her for right-sided phthisis, but about a year ago I considered her cured. The only cause of death that occurred to me was the impaction of a piece of orange in the trachea. A post-mortem examination was made 24 hours after death, at which I was kindly assisted by Miss Margaret S. Sharp, M.B. Lond. The right pleura was firmly adherent throughout. On opening the trachea it was found blocked by pieces of caseous gland. On the right side, half an inch above the bifurcation, was a round hole with smooth edges admitting a No. 12 catheter. This communicated with a sac containing caseous gland similar to that found in the trachea. There was an old fibroid tuberculous lesion at the root of the right lung almost completely healed. The cause of death was evidently the sudden blocking of the trachea by the rupture into it of a caseous gland. This case shows the importance of a post-mortem examination. I should be glad to hear of any similar cases that may have been reported.

Clare, Suffolk.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

KING'S COLLEGE HOSPITAL.

A CASE OF GASTROSTOMY FOR MALIGNANT DISEASE OF THE STOMACH.

(Under the care of Mr. W. ROSE.)

THE coexistence of the cysts of the kidney with the malignant disease of the stomach in the following case appears to have been a mere coincidence. Gastrostomy for carcinoma of the stomach itself is a rare operation and can only be required when the new growth is confined to the cardiac half of the viscus, for when the malignant growth affects more than half of the stomach a jejunostomy is preferable. For the notes of the case we are indebted to Mr. R. Sturgeon Cocke, house surgeon.

A woman, aged 69 years, was admitted into King's College Hospital under the care of Mr. Rose on Nov. 24th, 1900, with the following history. She had suffered from dyspepsia for years, but five months before admission she began to experience difficulty in swallowing. The dysphagia gradually increased so that on admission she was quite unable to swallow solids and only a small quantity of liquid, most of her attempts at deglutition being unsuccessful and immediately followed by regurgitation, suggesting an obstruction at the lower end of the œsophagus. Moreover, chronic constipation had existed for a like period, and she had lost weight to the extent of three or four stones, and there was marked cachexia. Careful auscultation failed to detect anything in the nature of an aneurysm. The urine was normal in every respect. As it was found impossible to pass an œsophageal bougie in the ordinary way the patient was anæsthetised and several sizes were introduced in succession, but in every instance the bougie was arrested at a point about 12 inches from the teeth. It was therefore obvious that the only operative treatment feasible was gastrostomy, since there was everything to indicate the existence of a malignant growth.

On Dec. 3rd the patient was again anæsthetised with a view to the operation of gastrostomy, and whilst the abdomen was being purified in the usual manner a rounded swelling of about the size of a fœtal head was seen and felt at the junction of the umbilical and left lumbar regions. The swelling was fairly moveable and its limits could be easily defined on account of the lax and thin condition of the abdominal wall. The abdomen was opened by a vertical incision five inches long, about one inch to the left of the median line, commencing two inches below the costal margin, the fibres of the rectus being separated by the finger. On introducing the hand into the peritoneal cavity the swelling was found to be cystic and connected with the lower end of the left kidney. On attempting to separate it the kidney substance was torn, leading to troublesome hæmorrhage, and the cyst opened, allowing of the escape of a considerable quantity of pale straw-coloured inodorous fluid; as no connexion could be found with the pelvis of the kidney it was probably serous in nature. Further examination of the organ revealed the existence of a similar cyst connected with its upper end; the wall was thin and easily gave way. The kidney was next drawn out of the wound and freed from its surroundings, and after the ureter and vessels had been severally tied it was removed.

In order to examine the condition of the stomach the incision was enlarged upwards for an inch and a mass, probably carcinomatous, was felt which at first appeared so extensive as almost to preclude any operative measures. On further examination, however, it was found that the pyloric end and lower portion of the great curvature were free and that the disease was mainly limited to the cardiac extremity. A cone-shaped portion near the pylorus was drawn into the upper part of the wound and its base was stitched to the parietal peritoneum and posterior layer of the sheath of the rectus. The sides of the cone were stitched to the rectus muscle and its apex to the skin through which it protruded for about half an inch. The lower portion of the abdominal wound was closed in the usual way after a counter-opening in the loin had been made for drainage. Finally, a small opening was made in the stomach at the apex of the cone and a piece of rubber tubing of the size of a No. 10 catheter was stitched in so that about two inches of it protruded into the viscus and three or four inches were outside. Four ounces of milk together with an ounce of brandy were at once introduced through the tube. Antiseptic dressings were applied in such a way that the tube could be reached for feeding purposes without disturbing the wound.

The patient suffered a great deal of pain for the first few days after the operation, but this was relieved by morphia. The food was well retained and there was not a sign of regurgitation. A little fluid given by the mouth was also swallowed and this relieved the dryness of the tongue and feeling of thirst. The urine was diminished for a few days and contained a trace of albumin, and the patient suffered from retention necessitating the use of a catheter. Diarrhœa set in on the third day with slight melæna, lasting four days. The temperature never rose above the normal. The drainage-tube from the loin was taken out on the fourth day and the stitches were removed from the abdominal wound at the end of a week. The subsequent course of the case has been as satisfactory as could be expected. The pain was considerably relieved for a time. The patient gained flesh and there was no difficulty in administering nourishment, since no regurgitation occurred through the opening and no irritation of the surrounding skin.

On March 10th, 1901, the patient's condition was as follows. She weighed 5 stones 10 pounds. The temperature was normal and the pulse was 68, full and regular. She was being fed by the stomach-tube every five hours, 16 ounces being administered at each feed. Benger's food was chiefly used and once a day a soup made of spinach and potato was given. The pain was variable, but seemed to have got worse lately, extending from the seat of the disease to the left shoulder, and requiring occasional doses of morphia. The bowels were constipated, though for a short time after the operation there was some diarrhœa. The constipation was overcome by glycerine enemata, since the administration of any aperient by the stomach brought on painful tenesmus. The general condition improved for some time, but the cachectic condition was becoming more marked. After this date the patient's condition steadily deteriorated and she died on April 3rd. Unfortunately no post-mortem examination was permitted.

Remarks by Mr. ROSE.—The most interesting feature in this case is the coexistence of a cystic kidney with malignant disease of the cardiac orifice of the stomach. From the excellent progress made by the patient after the operation it was evident that the left kidney had been for some time functionally useless, and that the relief of pressure consequent on its removal acted beneficially rather than otherwise. It was clearly in accordance with the principles of surgery to ascertain the nature of this abdominal growth, as until this was done it was impossible to say how far its presence would neutralise any efforts directed to the stomach. Had, for instance, this growth involved and obstructed the intestinal tract lower down the performance of gastrostomy would have been useless. As it was, the patient's life was prolonged for about four months, during which time the artificial opening acted most satisfactorily. There was no regurgitation and hence no irritation of the skin around. I should mention that the method I employed was a modification of Frank's operation, suggested and practised by my colleague, Mr. A. Carless. In it the apex of the cone of gastric wall is fixed in the upper angle of the incision, and the rectus muscle after being detached from its sheath is sutured together around it, thus constituting a very efficient sphincter.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.

A CASE OF TYPHOID FEVER WITH SUTURE OF THE PERFORATED BOWEL; RECOVERY.

(Under the care of Dr. H. MALET and Dr. E. DEANESLY.)

THE diagnosis of perforation of a typhoid ulcer is frequently very difficult, but sudden severe pain in the right iliac region occurring in the course of an attack of typhoid fever

is practically sufficient to justify the diagnosis. Whether recovery ever follows in these cases without operation is doubtful. Occasionally patients have recovered after a diagnosis of perforation of a typhoid ulcer has been made, although no operation has been done, but naturally a doubt has always existed as to the correctness of the diagnosis, for only in fatal cases has it been possible to verify it. For all practical purposes it may be said that laparotomy offers the only chance of recovery, and it should be performed as soon as the diagnosis is made unless the patient is moribund. For the notes of the case we are indebted to Dr. H. F. Parker, house physician.

A youth, aged 17 years, was on Feb. 16th admitted into the Wolverhampton and Staffordshire General Hospital under the care of Dr. Malet. The patient, who was suffering from typhoid fever, first felt ill on the 13th when he had some shivering, backache, and abdominal pain. On admission the temperature ranged from 100° to 103° F., the pulse varied from 68 to 80, and the tongue was dry and furred. There was no bronchitis; there was slight distension of the abdomen but no pain, the spleen was not palpable, and there were no rose-spots. Widal's reaction was dubious on the 19th but was subsequently well marked. The bowels were moved on the 19th after the administration of 2 drachms of castor oil. No aperient was given after this date. His condition steadily improved and the morning temperature had become normal on the 27th, the fifteenth day from the first symptom of his illness. On that day at 3.30 A.M. he was awakened by sudden violent abdominal pain which caused him to roll about in agony. Two hours later he vomited. The abdomen was then found to move very slightly with respiration and to be tender but not distended. The pain was not localised but was referred to the whole of the abdomen. The temperature was 98·4° and the pulse was 96. The liver dulness was normal. Turpentine stupes were applied; pain soon subsided and the general condition greatly improved. Flatus was passed, the pulse fell from 96 to 84, and the abdomen moved more freely. The temperature, however, rose to 102·8°. At 10.30 A.M., seven hours after the first onset of pain, the patient was seen by Dr. Deanesly who decided to operate at once.

The operation was performed in the ward without moving the patient from his bed. Chloroform was administered and the skin of the abdomen was thoroughly cleansed. On opening the abdomen by a three-inch oblique incision in the right iliac region turbid yellow fluid was at once found among the coils of small intestine and welling up from the pelvis. The second coil of small intestine which was brought out for inspection immediately disclosed a small perforation in the centre of a circular ulcer, the outline of which was visible through the coats of the bowel. The ulcer was situated opposite to the mesenteric attachment and was of about the size of a shilling. The perforation was in its centre, and fluid similar to that in the peritoneal cavity was seen escaping from it together with bubbles of gas. No other perforation was seen, but the possibility of the existence of more than one perforation, although borne in mind, was not thought to justify a prolonged search. The whole ulcer was invaginated by a complete transverse folding of the intestine and fixed in this position by a double row of continuous sero-muscular sutures of fine silk passing through healthy tissue at some distance from the margin of the ulcer. The peritoneum was then cleansed thoroughly by pieces of moist gauze passed among the adjoining coils and also down to the bottom of the recto-vesical pouch. The total quantity of extravasated fluid was estimated at seven or eight ounces. No drain was inserted. The peritoneum and transversalis fascia were sutured with a fine continuous suture of silk and the rest of the wound was brought together with silkworm-gut sutures.

The operation, which lasted about one hour, was borne without the slightest sign of shock, the pulse at the finish being 84 and of good volume. One-tenth of a grain of morphia was injected as soon as consciousness returned and the patient was soon asleep. There was no vomiting after the operation and flatus was passed the same evening. After the first 24 hours his condition never gave rise to anxiety and the temperature scarcely rose above normal. The wound, however, which was unavoidably contaminated by the extravasated fluid, suppurated on the fourth day and the stitches had to be removed. The wound then granulated readily and healed quite soundly, the peritoneal suture not having required removal. The bowels were moved on March 3rd by an enema and solid food was allowed on the 16th. The patient got up on the 31st and was discharged in good health on April 6th.

Remarks by Dr. DEANESLY.—When I first saw the patient the most remarkable thing about him was the absence of anything in his aspect or pulse to suggest a serious abdominal lesion, and this in spite of the fact that no opiate had been administered. The only signs that I could detect were a slight but distinct deficiency of abdominal respiration and a little tenderness in the right iliac fossa. Nevertheless, the history of the attack was so unmistakeable and the house physician's account of it was so accurate and circumstantial that I did not hesitate to operate. I do not know whether a lateral incision is usually adopted for this purpose, but from the common situation of the majority of ulcers occurring in typhoid fever an incision in the neighbourhood of the cæcum appears to me to be preferable to a median section. At any rate, I was fortunate in finding the perforated ulcer with great ease. Invagination of the whole ulcer is the most obvious method of closing the perforation as it is impossible to suture the rotten tissues over the ulcer itself. This cannot be done by means of a longitudinal fold without dangerously narrowing the lumen of the bowel, but by a transverse folding of the bowel an ulcer of any size can be invaginated without producing more than a moveable internal spur something like an exaggerated valvula connivens. I have adopted this method for dealing with a localised gangrenous patch of bowel in a case of strangulated hernia with a perfect result.

The question of drainage or no drainage is always a difficult one in such cases and must be decided in each case on general principles. In this case the short duration and small amount of extravasation decided me to trust to the peritoneum to deal with all that was left after a careful cleansing. In this expectation I was not deceived, but it is significant of the varying capacity of different tissues for dealing with the same infective agent that the parietal wound suppurated while the peritoneal infection was arrested.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Acute Colitis in Children.—Rheumatic Chorea, its Varieties and their Treatment.

A MEETING of this society was held on May 13th, Mr. JOHN H. MORGAN, the President, being in the chair.

Dr. EDMUND CAUTLEY read a paper on Acute Colitis in Children which is published *in extenso* at p. 1463 of our present issue.—Dr. F. DE HAVILLAND HALL remarked on the frequency of "summer diarrhœa," so-called, and expressed the opinion that the term had much too wide an application. The different varieties of pathological condition to which the term was applied were not, he thought, sufficiently differentiated. There were many indications in Dr Cautley's cases which supported the notion that the colitis was of toxæmic origin, such, for instance, as the absence of any local pain or tenderness.—Mr. F. C. WALLIS remarked on the selection of the colon by the disease which seemed to be strictly localised to this structure. What was the reason for this special proclivity? He suggested that this was very probably due to the differences in the chemical composition of the contents of the large bowel as compared with that of the small intestine. The contents of the small intestine had actively digestive properties, and in fæcal fistulæ communicating with the small bowel great trouble was experienced in protecting the skin around the wound. This was not so in fistulæ connected with the large bowel. Perhaps the absence of digestive substances from the colon allowed bacteria to obtain a footing in the latter.—Dr. A. F. VOELCKER, referring to his experience in the dead house, remarked that most cases of colitis proved at the necropsy to be part of a generalised gastro-enteritis. He would like to ask Dr. Cautley what were the grounds on which he concluded that the vomiting in his cases were independent of any stomach lesion? He would also like to ask whether Dr. Cautley had tried creasote and castor-oil in the treatment of these cases? He (Dr. Voelcker) had employed these remedies in similar circumstances with considerable advantage and there would seem to be every indication for the employment of intestinal antiseptics.—

Dr. CAUTLEY, in replying, remarked that the children died in this disease from general infection. This was consistent with the absence of local signs. Although there was general involvement of the colon there was a notable absence of local signs. The order in which his cases had developed the disease was first the child, then the infant, who caught the disease from the child, and then the mother. Why the disease should be limited to the colon he could not say. Mr. Wallis's explanation was feasible up to a certain point, but in his belief the main reason was because the intestinal contents stayed longer in the colon. The best treatment, if seen early, was free purgation to start with. Irrigation of the bowel had been tried but it only did partial good. Operative treatment was of very doubtful use. He did not use creasote. Post-mortem signs had been his chief guide to treatment. He did not think that intestinal antiseptics would be beneficial. His favourite remedy was salicylate of bismuth, with cocaine to stop the vomiting. The evidence on which he concluded that the vomiting was probably of toxæmic or reflex origin was the cleanness of the tongue and the absence of catarrh from the stomach and small intestines.

Dr. LEONARD GUTHRIE read a paper entitled Remarks on Rheumatic Chorea: its Varieties and their Treatment. He regarded ordinary or Sydenham's chorea as a rheumatic manifestation and not as a disease in itself. "Fright" cases were not in a different category, for fright was only another name for shock. The results of shock were the same, whether produced by injury, by chill and exposure, or by emotion. Shock from any cause lowered vitality and favoured the action of the rheumatic diplococcus. When chorea ensued there was doubtless some peculiar instability or weakness of the nervous system as well. Chorea was divided for convenience of description into two main varieties—sthenic or explosive and asthenic or pseudo-paralytic—each of which was subdivided into severe and mild. Severe sthenic cases were characterised by spontaneous, uncontrollable, conflicting movements, which were increased on attempted voluntary action, and also when the patient was under observation. The milder sub-varieties of sthenic chorea were: (1) cases in which spontaneous movements ceased during rest but were excited by voluntary actions and by observation of the patients; (2) cases in which spontaneous movements could be controlled by an effort of will, but the effect was to produce rigidity of the limbs and extreme incoördination in attempted voluntary actions; and (3) cases of residual chorea in which the symptoms continued, but the complaint seemed cured, for spontaneous movements ceased and voluntary actions could be performed without ataxy and rigidity when the child made an effort of will. The duration of severe sthenic cases seldom exceeded two or three weeks. Sometimes one or other of the sub-varieties then made its appearance, but more frequently severe sthenic cases became equally severely asthenic in character. Sometimes mixed cases in which both types prevailed were met with. In severe asthenic chorea all choreic movements ceased and the patient seemed paralysed from head to foot. Rapid emaciation was the rule. Mania or dementia was not uncommon and complete mutism lasting many weeks sometimes occurred. In milder cases movements were also absent and the patient seemed paralysed in one or more limbs. Mild cases of sthenic and asthenic chorea at times became severe and the severely asthenic seldom became severely sthenic in type. The treatment of severe sthenic cases consisted in absolute rest in bed, protection from injury, and in some cases restraint of movements by splints and bandages. Chloral hydrate and bromides were the best remedies. Other sedatives were useful. Severe asthenic cases required rest in bed, abundant diet, stimulants and tonics, massage, and occasionally galvanism. The methods used in milder sthenic cases were (1) suggestion; (2) suggestion with passive movements; (3) suggestion with voluntary movements under guidance; (4) voluntary movements and exercises without guidance; and (5) incoördination was treated on Frankel's system used in locomotor ataxy—by exercises and various toys and games to aid precision in movements. Treatment by suggestion and encouragement of voluntary actions were also useful in cases of asthenic chorea. Arsenic in ordinary doses did good in most cases, but treatment by heroic doses of the drug was regarded as useless, unjustifiable, and dangerous.—Dr. CAUTLEY agreed in condemning arsenic as it was at present employed, but he asked what effect Dr. Guthrie had obtained by starting with large doses and continuing it only for a limited time. The treatment suggested by Dr. Guthrie was more applicable to the rich than to the poor. The methods of treatment by physical exercises would doubtless be very useful if skilled assistance was at hand. His experience of treating children by "suggestion" was not very satisfactory.—Dr. CHARLES CHAPMAN asked whether such large doses (six to eight ounces) of brandy were not as detrimental to children in other ways, even if they did good for the disease.—Dr. ALEXANDER MORISON asked whether Dr. Guthrie had noticed any relation between the type of case and the incidence of endocarditis. He thought that those curious, fatuous, aphonic cases were relatively exempt from endocarditis. He quite endorsed the views against large doses of arsenic if continued for long, but given in a more moderate manner it seemed to have a special effect on the disease.—Dr. VOELCKER remarked that treatment must depend largely upon the pathology of the affection. Dr. Guthrie seemed to regard these cases of chorea as due to the action of a rheumatic poison on the nerve cells producing over-action. His (Dr. Voelcker's) view was that it rather removed the inhibition of the cerebral influence. If that were so the education of these children to build with bricks and play with toys was not rational. Rest seemed to him to be a more rational method so as to allow of recuperation. Residual chorea might, however, be treated by Kindergarten games and physical exercises. He had not a great belief in large doses of arsenic, but small doses seemed to influence the disease.—Dr. GUTHRIE, in reply, said that in his experience large doses of arsenic seemed to make children sick—a fortunate circumstance, for it saved them from its toxic effects. He had found that it was more difficult to get skilled assistance in private practice than in hospital. Treatment by "suggestion" and exercises must be confined to cases in which the acute stages had been got over. The use of large doses of stimulants no doubt wanted watching. As to the occurrence of endocarditis, he thought that it was less frequent in asthenic than in sthenic cases. He felt sure that chorea degenerated (or developed) into a "habit," and gradually evolved exercises were very useful in preventing the perpetration of the disorderly movements of chorea in the form of habit spasms or tricks.

Annual Oration.—Conversazione.

A meeting of this society was held on May 20th, Mr. JOHN H. MORGAN, the President, being in the chair.

Mr. F. RICHARDSON CROSS (Bristol) delivered an oration on Some Landmarks in the Progress of Medical Science. After referring to the important part played by time in the affairs of men, the orator alluded to the close of the Victorian era, the longest, most prosperous, and the most remarkable period in the history of the British nation, paying also a rare tribute to the influence of Her late Majesty. For 63 years her influence had been ceaselessly directed to uplift and purify the life of the nation. She was the living symbol of the unity of the empire and would continue to live in the undying reverence and affection of her former subjects. It was said that the Egyptians and Babylonians exposed their sick in public so that any passer-by might give his aid by former personal experience and those relieved were required to go to the temples and there record their symptoms and their cures. Before Hippocrates, early Egyptian practice was in the hands of the priest physicians. The sick attended at the temple where they were relegated to some one specially acquainted with their particular malady. The Jews probably learned their medicine from the Egyptians; their guiding principle was cleanliness, and the regulations of Moses for the public health were of more than passing interest. Greece was the motherland of rational medicine, and from the time of Hippocrates to that of Harvey it was always the medicine of the Greeks that alone commanded attention, whether it emanated from the schools of Alexandria, Rome, Bagdad, Salerno, or Paris. Homer (B.C. 1250) told of the Thessalian chieftain and blameless physician Æsculapius, and of his sons Machaon and Podalirius who acted as surgeons in the Trojan war. Pythagoras (B.C. 582) raised a school of more philosophic medicine, and the services of medical men were recognised in Greece as of high value for the welfare of the State. Many towns kept a physician for the public service and Herodotus mentions that the physician Democedes (B.C. 520), a pupil of Pythagoras, was chosen public medical officer at Ægina with a salary of a talent (£240) per annum, an income far in excess of that received by an Athenian

Ambassador of those days. He afterwards went to Athens in the same capacity and then to Samos where he received a salary of two talents. It was the master mind of Hippocrates (B.C. 460) that gathered up what was best and gave to medicine an impress of his own, teaching that careful observation and recorded facts were essential for wisdom in medical science. He denied that disease had a supernatural origin: "from God comes one disease as well as another, but nothing happens except in conformity with nature." His knowledge of diagnosis and treatment was marvellous when it was remembered how superficial was his acquaintance with anatomy, for the Greeks religiously guarded the bodies of the dead. Plato (B.C. 427) and Aristotle (B.C. 384) were next referred to. The former seemed to have but a poor opinion of medical men, but Aristotle, a pupil of Plato, was a member of a medical family and educated as a physician. He founded a school of anatomy at Alexandria where anatomy was first studied by dissection. His plans and methods of classification were copied 2000 years afterwards by Cuvier. For centuries the Alexandrian school was the focus of the intellectual life of the world. Herophilus and Erasistratus (about B.C. 300), Philoxemus and Ammonius were among the workers there. The orator then passed briefly to consider the various schools of teaching which sprung up—the Rational or Dogmatic school of Hippocrates, the Empirics, the Methodists, and the Eclectics. In the second century before Christ Marcus Portius Cato, the censor who strove to stem the tide of Greek luxury, gave some useful surgical rules in his "De Re Rustica." The first physician of eminence who practised in Rome was a Greek, Asclepiades (128 B.C.), a friend of Cicero. He left behind him a number of worthless imitators who desired to be judged by the luxury they displayed rather than their knowledge, and a few more capable pupils who developed the methodic system. In Rome medical men seemed to have had but a poor social position and most of them were foreigners or freedmen. The calling was considered unworthy of a Roman citizen, at any rate, until the first century of the Christian era. In the Roman period the physician (*medicus clinicus*) and the surgeon (*chirurgicus*) seemed to have been clearly distinguished. Celsus was the greatest man associated with Roman surgery, but it was doubtful if he ever operated, or, indeed, if he was a medical man at all. Galen (A.D. 131 to 201) was a Greek but went to Rome. Subsequent Greek and Roman authors were mainly compilers from his writings. After his time the practice of dissection was apparently given up for centuries. Amidst the general disregard of learning in Europe during the Middle Ages the practice of the healing art was maintained chiefly among the religious orders, where it was much interwoven with augury, divination, cheiromancy, astrology, and alchemy, excepting perhaps among the Benedictines. In their hands the practice of physic became so lucrative that an ordinance of Pope Innocent III. debarred the clergy from undertaking surgical operations in 1215. This threw the practice of surgery into the hands of the barbers and bone-setters who practised it mechanically and without any special training or anatomical knowledge. About 1423 an effort was made to form a conjoint faculty of medicine and surgery, but it was short-lived. The surgeons, however, continued to work together, and in 1435 the Guild of Surgeons was founded, the College of Physicians being founded later. After tracing the evolution of medicine and surgery in the succeeding centuries the orator concluded by adverting to the usefulness of the study of modern languages.

Mr. CHRISTOPHER HEATH proposed, and Mr. HENRY MORRIS seconded, a cordial vote of thanks to the orator, which was carried by acclamation, and Mr. RICHARDSON CROSS briefly replied.

The meeting was then resolved into a conversazione.

PATHOLOGICAL SOCIETY OF LONDON.

The Morphology of the Genus Streptothrix.—An Unusual Case of Intestinal Obstruction.—Case of Calcified Pericardium.—Thrombosis of the Lateral Sinus in General Tuberculosis.—Sarcoma of the Suprarenal Body.—Calculi Formed on Pubic Hairs.—Annual General Meeting.

A MEETING of this society was held on May 21st, Mr. W. WATSON CHEYNE, the President, being in the chair.

Mr. A. G. R. FOULERTON and Dr. C. PRICE-JONES communicated a paper on the Morphology and General Characteristics of the Genus Streptothrix. Cultures of 25 species, 10 of which were pathogenic, were shown. These included four new species—streptothrix lutecla, streptothrix leucea, streptothrix leucea saprophytica, and streptothrix erythrea. Of these the first was pathogenic, having been isolated in pure culture from a case of acute conjunctivitis with sloughing of the cornea. It was not the same organism which Dubois St. Sevrin had described under the name of streptothrix aurea as a cause of conjunctivitis. The morphology and method of development of the various species shown was considered and Mr. Foulerton and Dr. Price-Jones pointed out the reasons for placing the streptothricheæ amongst the hyphomycetes, or mould fungi, rather than amongst the bacteria, or fission-fungi. The writers who had regarded them as highly pleomorphic fission-fungi had been misled by the examination of single species in which the true course of development was difficult to follow. An examination of a series of species left no doubt in the minds of Mr. Foulerton and Dr. Price-Jones but that the original classification of Hartz, which placed these species amongst the higher fungi, was the correct one. Out of the 10 pathogenic species examined, two, streptothrix Nocardii and streptothrix capræ, were found to be both acid-fast and alcohol-fast, whilst two, streptothrix Eppingerie and the streptothrix described by Sabrazès and Rivière, were found to be acid-fast, but the carbol-fuchsin was discharged by a subsequent washing in absolute alcohol. Lantern slides illustrating the fragmentation of the mycelium and the development of spores by segmentation were exhibited; and an exhaustive table was submitted comparing the 25 species examined by Mr. Foulerton and Dr. Price-Jones as regards their growth on gelatined on inspissated horse-serum, their diastatic action on starch, their growth on nutrient malt-agar (the best medium to grow them upon), on potato and in alkaline milk, their thermal death-point, and their staining reaction to the Ziehl-Neelsen method. No doubt but that the species of streptothrix described by Afanassiew and others in certain cases of human disease was identical with streptothrix bovis communis, which was the cause of the common actinomycosis of cattle. But many other species had been met with and these were briefly referred to. Possible sources of infection for man were to be found in cereals which were known to harbour fungi of this sort; absolute proof of infection of man from this source was, however, still wanting. Some of these fungi had been found in grass.

Dr. HUGH THURSFIELD narrated an Unusual Case of Intestinal Obstruction. The patient was a boy, aged two and a half years, who was admitted to the Hospital for Sick Children, Great Ormond-street, with symptoms of intestinal obstruction which had set in three days before admission. From birth he had had attacks of vomiting which recurred every four to six weeks. He was operated on, but without any definite obstruction being found. At the post-mortem examination the mesentery was discovered to have only its primitive short attachment to the spinal column, while the colon ran behind instead of in front of the small intestines. The anomalous conditions appeared to be capable of explanation by a reversal of the normal twist of the gut from left to right, which occurred in the process of development at a certain period of intra-uterine life.

Mr. ERNEST JONES (introduced by Dr. J. ROSE BRADFORD) exhibited a specimen of Calcified Pericardium taken from the body of a man, aged 60 years, who had died in University College Hospital in November, 1900. He had never had rheumatism, but had suffered from dropsy for 10 years. There was enormous enlargement of the præcordial area of dulness but no definite murmur to be heard. There was left hemiplegia. He died from pneumonia and at the necropsy the most noticeable feature was the presence of free spaces outside the heart, between it and the pericardium, filled with blood-clot. The walls and cavities of the ventricles were of about the normal size, but the auricles were enormously dilated and their walls thinned, especially the left. The true condition was not diagnosed during life, the case being looked upon as one of great dilatation of the heart. No cause could be suggested for the hæmorrhage into the pericardium. Mr. Jones had collected records of 58 cases of calcified pericardium. The condition seemed to be twice as common in the male; the average age was 48 years, whereas adherent pericardium was equally common in the two sexes and the average age was 36 years. There seemed to be no signs diagnostic of calcified pericardium during life. There had been no cardiac signs at all in a quarter of the cases, and the diagnosis even of adherent

pericardium had only been made once in the 58 cases. The patient occasionally lived for 19 or 20 years. There was no valvular lesion at all in half the cases and it had only been slight in two-thirds of the remainder. The probable causes of the condition were discussed. Suppurative pericarditis and tubercle were often given as the chief causes, but in only 13 per cent. of these cases the lesion was probably the result of the former, and not one case could be clearly traced to tubercle. Mr. Jones was indebted to Dr. J. Rose Bradford for permission to publish the case.

Dr. J. FAWCETT exhibited a specimen of Thrombosis of the Lateral Sinus and Cerebral Veins in a case of General Tuberculosis. The patient was a boy, aged three and a half years, who died from general tuberculosis of the subacute type. There were caseous mediastinal and bronchial glands with caseous broncho-pneumonia and tuberculosis of the abdominal viscera. The brain showed extensive thrombosis of the veins over the ascending frontal, parietal, and temporo-sphenoidal lobes on the right side, and the lateral sinus was also completely thrombosed as far as the jugular foramen. There was no clot in the internal jugular vein. The cerebral substance corresponding to the vascular area affected was in a condition of acute red softening with many hæmorrhages present. There was no thrombosis in any of the arteries or of the other sinuses nor any local source of infection within the cranium, such as ear disease. The extensive softening with hæmorrhages pointed to an infective origin. In most of such cases thrombosis was due to marasmus.

Dr. FAWCETT also exhibited a specimen of Sarcoma of the Right Suprarenal Body removed at the necropsy on a woman, aged 30 years. The growth measured 26 by 21 centimetres and was adherent to the under surface of the liver. Satisfactory microscopical preparations had not yet been obtained on account of the friable nature of the tumour. There were two specimens of suprarenal sarcoma in the museum of Guy's Hospital.

Dr. HUGH THURSFIELD exhibited the Left Femur from a case of Infantile Scurvy occurring in a boy, aged 13 years, hardened in formalin so as to preserve the colour.

Mr. THOMAS BRYANT exhibited several Calculi which had been formed on Pubic Hairs.

The annual general meeting was then held. Certain alterations in the rules, as recommended by the council, were put to the meeting and carried, the PRESIDENT explaining that their object was to abolish the distinction between resident and non-resident members.—The annual report, read by the SECRETARY, showed the society to be in a prosperous condition. The institution of the laboratory meetings had been a success. The future work of the society would be promoted by its division into four sections. The Secretary also read the treasurer's report, which showed a satisfactory balance at the banker's. The society had arranged to pay less rent for the use of the room for meetings.—The adoption of these reports was carried.—Sir R. DOUGLAS POWELL, Bart., proposed, and Mr. S. G. SHATTOCK seconded, a vote of thanks to the retiring officers and the council.—Mr. D'ARCY POWER proposed, and Dr. W. BULLOCH seconded, a vote of thanks to the retiring secretary, Mr. C. A. Ballance.

At the close of the ballot it was announced that the officers and council for the ensuing session, as nominated by the council, had been elected as follows:—President: Mr. W. Watson Cheyne. Vice-Presidents: Dr. E. Crookshank, Dr. W. D. Halliburton, Mr. V. A. H. Horsley, Dr. E. Klein, Dr. S. Martin, Dr. F. W. Pavy, Dr. J. F. Payne, and Mr. J. H. Targett. Treasurer: Dr. Sidney Coupland. General Secretary: Dr. J. Rose Bradford. Sectional Secretaries: Dr. H. Morley Fletcher, Mr. A. G. R. Foulerton, Dr. T. Grigor Brodie, and Dr. A. E. Garrod. Council: Dr. James Galloway, Dr. C. D. Green, Dr. H. D. Rolleston, Dr. N. Dalton, Dr. G. F. Still, Dr. T. W. P. Lawrence, Mr. D'Arcy Power, Dr. F. W. Andrewes, Dr. W. Bulloch, Dr. John McFadyean, Dr. Allan Macfadyen, Mr. H. G. Plimmer, Mr. W. C. C. Pakes, Dr. W. S. Lazarus-Barlow, Mr. W. Edmunds, Dr. E. H. Starling, Mr. C. A. Ballance, Dr. F. G. Hopkins, Dr. V. Harley, and Dr. S. G. Hédin.

LIVERPOOL MEDICAL INSTITUTION.

Perforated Gastric Ulcer.—"Malignant Polypus."—Tetanus.—Friedreich's Ataxia.—Family Muscular Atrophy.

AN ordinary meeting of this society was held on May 9th, Mr. EDGAR A. BROWNE, the President, being in the chair.

Mr. ROBERT JONES related a successful case of operation for Perforated Gastric Ulcer. The patient, a male, had an attack of hæmatemesis two and a half years previously. On Dec. 19th, 1900, whilst taking lunch, he was suddenly seized with great pain. When seen at 10 P.M. his pulse was rapid, the abdomen was slightly distended, there was an absence of liver dulness, and the patient was suffering great pain. He was removed to hospital and two hours later he was operated upon, an ulcer being found on the anterior surface of the stomach at the pylorus. The opening was closed with Lembert sutures and a piece of omentum was stitched over the suture line. Mr. Jones stated that this was his third case. In two of the cases the patients had recovered. The other patient had died on the fifteenth day from the formation of a sub-diaphragmatic abscess due to an infection of the lesser omentum, caused probably by irrigation of the abdomen.—Mr. RUSHTON PARKER said that it had happened to him also to have two early cases operated upon on the same evening as the accident and resulting in success, while in another, after three days' delay, death resulted owing to suppuration beneath the diaphragm which could not be recognised at the operation.

Mr. CHAUNCY PUZEY showed a man, aged 61 years, whose right superior maxilla he removed in January last for "Malignant Polypus" growing from the Antrum. The line of incision was Ferguson's and the result was a good instance of the very slight disfigurement which that extensive wound often leaves. Before the operation the origin of the polypoid growth, which filled the right nares (anterior and posterior), was doubtful, as there was no alteration in the shape of the jaw either in the cheek or the mouth, but there was obstruction of the lacrymal duct. The principal complaint made by the patient was that he was suffering from incessant and often agonising pain shooting up behind the eye and right forehead to the top of his head. This was readily accounted for when it was found during the operation that all the posterior wall of the antrum had disappeared, together with a considerable portion of the floor of the orbit and a portion of the ethmoidal cells, this being apparently the result of pressure (not infiltration) by the growth. The growth was reported to be "sarcoma, spindle-celled, with a considerable amount of interstitial tissue in parts, not very malignant."

Dr. D. SMART related a case of Tetanus, successfully treated by Hypodermic Injections of Carbolic Acid. The patient, a male, aged 33 years, who had been drinking heavily and lying about a stable, had a chronic ulcer on each shin which was covered with a filthy dressing. On admission to hospital he had a severe tetanic spasm, the back, the jaws, and the legs being affected. The treatment was copious liquid nourishment by means of funnel and tube, one third of a grain of morphia, and bromide and chloral every four hours, the ulcers being scraped and dressed with 1 in 40 carbolic lotion. Next day the spasms occurred every half hour, and 10 cubic centimetres of antitoxin were administered. The following day he seemed worse; 10 cubic centimetres of antitoxin were given again, but later his condition was so serious that 20 minims of a 1 in 50 solution of carbolic acid were injected and repeated every three hours, after which improvement set in. In five days he was practically well, having had 28 injections in 84 hours (in all 11½ grains of pure carbolic acid). The conclusions were: (1) that the filthy dressings of the ulcers illustrated the anaerobic nature of the tetanus bacillus; (2) that the doses of tetanus antitoxin (10 cubic centimetres given twice) were probably too small; (3) that the hypodermic injections of carbolic lotion produced neither local irritation nor carboluria; and (4) that although chloral and bromide were administered throughout the illness recovery was attributed to the use of carbolic acid.—Mr. R. W. MURRAY mentioned two cases of tetanus that had been under his care. In one the symptoms commenced 14 days after a burn of the right leg and side, the first indication of the disease being right facial paralysis. Death occurred within 48 hours. The other was that of a gardener who cut his finger and the symptoms, which were of the subacute type, were first noticed nine days later. He was treated with anti-tetanic serum, having in all 50 cubic centimetres, and he recovered.—Dr. T. R. BRADSHAW referred to a case brought before the society eight years ago in which recovery had ensued on the administration of chloral and bromides. He doubted whether the recovery in Dr. Smart's case could be attributed to the therapeutic measures employed. The case was evidently not a severe one and had lasted some days before the injections of carbolic acid were used, and when a case had lasted a week or 10 days it commonly ended

in recovery.—Mr. G. P. NEWBOLT considered that patients the subjects of acute tetanus usually died in 48 hours after the onset in spite of treatment, whether by antitoxin or carbolic acid injections. In the cases of so-called chronic tetanus the patients got better as a rule, though in many of them spasms were very severe and it was often difficult to draw the line between the acute and the chronic case.—Mr. RUSHTON PARKER classified cases of tetanus as acute and chronic. The former commonly lasted no more than 24 or 48 hours; the latter a week or more, sometimes many days. The period of incubation was of too uncertain a duration to rely upon as an indication of acuteness or chronicity. The mortality of acute tetanus was understood to be 100 per cent. however treated, while that of chronic tetanus did not exceed 50 per cent. under expectant management. If by successful treatment they could diminish the mortality to a notably lower figure in chronic tetanus, that was about all they were at present entitled to hope for. His own cases had all been acute and rapidly fatal with one exception, a boy, aged 14 years, in whom he had recognised chronic tetanus, and had injected antitoxin with, he believed, curative effect, or at least apparent relief. But in Dr. Smart's case it seemed that relief was produced by carbolic injections. In Mr. Parker's opinion it did not seem that "severity" of symptoms could be taken as a measure of the acuteness, as in his chronic case the severity of pain and rigidity seemed equal to anything that he had seen even in acute and fatal cases.

Dr. R. CATON read a report on Three Cases of Friedreich's Ataxia in One Family. No evidence existed of antecedent nervous disease in the family and there was no history of syphilis or of excess in alcohol. Ataxia, nystagmus, impairment of speech, and loss of tendon reflexes, occurred in all of the cases. There was slow tremor in two of them and lateral spinal curve, talipes equinus, and dorsal flexion of the hallux occurred in one case. None of the other symptoms characteristic of tabes were present. The disease appeared to have commenced in the three cases at the ages of 11, 14, and 17 years.—Dr. BRADSHAW showed a fourth case of Friedreich's ataxia in a girl, aged 16 years. There was no neuropathic family history, neither was there consanguinity in the parents. No other members of the family were affected. The symptoms began a year ago with unsteadiness in walking which had progressed. There were nystagmus, loss of knee-jerk, and unsteadiness when standing which was not increased when the eyes were closed. Sensory symptoms were absent and there was no marked interference with articulation.

Dr. W. B. WARRINGTON described a rare form of Muscular Atrophy, known in this country as the hereditary type of peroneal atrophy first described by H. Tooth and Charcot and Marie. He pointed out the characteristic features of this affection—viz., an atrophy beginning in the muscles of the outside of the leg and then invading the small muscles of the hand. The knee-jerks were absent and the electrical reactions were peculiar inasmuch as muscles which were capable of good voluntary movement could be stimulated only by very strong currents and then they only reacted feebly. Dr. Warrington discussed the literature of the subject, especially the papers by Hoffmann and Bernhardt, and pointed out that when dealing with hereditary nervous affection the symptomatology tended to extend beyond the well-defined lines of the classical description.—Mr. ROBERT JONES remarked on the surgical treatment of this case of Tooth's paralysis which he had had under his care. Both feet were affected, the left being the worst. The foot was in equino varus with limitations of ankle movement and a general rigidity of structures in marked contrast to the paralytic type. There were a general loss of flexibility in all the joints of the foot and contraction of the plantar fascia. No spasm was present, but there was contracture of tendons. The tibialis posticus, the tendo Achillis, and the extensors of the toes and the deep ligaments of the sole were divided, and the foot was forcibly wrenched into position. The left foot gave great trouble from a sharp flexion angle formed by the metatarso-phalangeal row on the plantar aspect, and was treated by ex-section of each prominent phalangeal base. The patient now walked quite comfortably.—Dr. BRADSHAW said that the family history did not seem to support the view that the different developmental neuropathies merged into each other, but the contrary. A family affected by the peroneal type of paralysis was not affected by Friedrich's ataxia, and *vice versâ*. The hereditary weakness appeared to be inherent in certain tracts of the central nervous system and not in that system as a whole.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.

THE seventh ordinary meeting of this society was held on May 1st, Dr. A. G. MILLER, the President, being in the chair.

Dr. NORMAN WALKER showed a case of Bazin's Disease in a girl, aged 16 years, who came to the infirmary about eight weeks before with an eruption on one leg extending up to the waist and looking something like ecthyma. The lesions were deeper, however, and had a more chronic appearance than the lesions of that disease and all cultivations from them proved to be sterile (unlike ecthyma). The patient had markedly enlarged cervical glands and some dulness at one apex with cough and expectoration. The case at that stage was the first definite example which he had seen of the condition described by Kaposi as acne scrofulosorum. During her stay in hospital there was no great improvement, but soon after she went home the condition got much worse and she returned with the lesions advanced and the condition now closely resembled that known as Bazin's disease.

Dr. WALKER also showed two other cases which he exhibited mainly for the interest attached to their treatment. The first was a case of Lupus of very extensive distribution. This had been over the face treated for the past five months with weekly applications of the x rays, the exposures latterly lasting for 20 minutes. The patient was far from well, but the improvement was very marked and the increase in comfort was alone worth the trouble. A peculiarity which he had noted in connexion with the treatment of such cases by the x rays was shown in this patient—namely, that the disease had improved to a greater extent behind the neck than in the front, though the rays were only used in front. The rays seemed to be more active at their points of emergence than at their entrance and their application was absolutely painless and gave rise to no ulceration. During a recent visit to the London Hospital, where he had had an opportunity of seeing both varieties of the light treatment, Dr. Walker was greatly impressed by the success attendant on the much less advertised x-ray treatment. While there on a previous occasion he had seen a further use of the rays in connexion with the treatment of rodent ulcer the results of which were so good that it was almost necessary to see to believe. Large cavities occupied by inoperable cancers had filled up and healed with a smooth scar. The treatment had been commenced on two of Dr. Allan Jamieson's patients, and he showed one of them (a man) who had had six exposures to the rays and already the ulceration had greatly improved.

Mr. SHAW M'LAREN demonstrated Schlangintweit's Cystoscope and showed the advantages which this instrument possessed over other similar varieties.

Dr. T. V. PATERSON showed a most instructive series of sections through Diseased Eyeballs mounted in Gelatin. He also showed a large number of lantern slides illustrating Eye Diseases.

Dr. WILLIAM RUSSELL read a paper on Arterial Hypertonus and Arterio-sclerosis, their Relations and Significance, with a lantern and microscopic demonstration. The paper will be published in our columns shortly.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

Mortality of Infants from Improper Feeding.—Tuberculosis in Cattle.

A MEETING of this section was held on April 26th, Sir C. A. CAMERON, the President, being in the chair.

Mr. GEORGE P. COPE read a paper on the Mortality of Infants under One Year from Improper or Imperfect Feeding, with Suggestions for Public Instruction to Parents and Nurses on the subject, enumerating a list of diseases, together with the number of deaths caused by the same (made out from the Registrar-General's returns of registered deaths in Ireland for the years 1890 to 1899) which could be considered to be directly or indirectly due to improper feeding. For the last five years—1895 to 1899—there was an

increase of 2188 deaths compared with the previous five years —1890 to 1894. He pointed out that a great number of deaths under the headings of debility, inanition, convulsions, and dentition were registered as uncertified, and suggested that registrars of deaths who were medical men should try to ascertain from the informants what led up to these symptoms and to register the deaths under proper diseases. Mothers brought their infants to dispensaries suffering from the effects of improper feeding; these infants were fed on all kinds of starchy and animal food from pure ignorance. At the time of registration of birth registrars should be instructed to give to every informant a paper containing rules in relation to the proper feeding and general management of infants, &c. This document should be provided by the Government and issued to the registrars at the time they received their supply of vaccination papers from Charlemont House. Mothers who could not suckle their children throughout the early months of infancy ought to be encouraged to take necessary precautions (especially during the summer months) in feeding their infants, and it would be advisable to embody in the instructions certain directions as to how to sterilise milk.—Mr. LANGFORD SYMES said that a child might get a large amount of food but no nourishment, and a child might be starving when being fed on the richest kind of food which it was perfectly unable to digest. In children who had died from this cause it had been found that in the later stages the beautiful structures for digestion and absorption were completely abolished and the intestines were rendered like a hose or indiarubber tube, the food going in at one end and rushing out at the other.—Professor E. J. MCWEENEY said that, speaking from the pathological point of view, he was in great ignorance as to the exact causation of death in many cases certified as marasmus, tabes mesenterica, and the like. At his own hospital it was the rarest possible thing to get a necropsy of a child under the age of five years—not one in the year. He considered that to make themselves absolutely certain as to the true cause of death an attempt should be made by the medical profession to obtain necropsies of young children by an expert in as many cases as possible. There was a danger in giving children what he might call pseudo-sterilised milk—milk Pasteurised, raised to a point below boiling point, in which lactic fermentation had been checked, but spore-forming organisms were still present. The lactic organisms being done away with the milk did not turn sour in the ordinary way, but the spore-forming organisms, as Flügge had shown, produced toxic peptones or albumoses which when given to animals caused diarrhœa, convulsions, and death. After Pasteurisation or sterilisation of milk it should be given to the child at once or kept at such a low temperature by being placed in cold water as to prevent growth.—The REGISTRAR-GENERAL said that every effort in the direction indicated in Mr. Cope's valuable paper would have his most hearty coöperation. Any action must originate with the Royal College of Physicians of Ireland, and the approval of the Local Government Board of Ireland must be obtained.—Mr. A. J. HORNE said that, of all places, in Dublin the women took most care of their children. Some of the lying-in hospitals had issued printed rules to parents, but they either threw them into the fire or if they read them they thought they knew better.—Dr. NINIAN FALKINER presented statistics showing that in 1899, among children under one year old, the death-rate per 1000 births was 108 in Ireland and 163 in England; in 1900 the corresponding figures were 108 in Ireland and 154 in England.—Mr. EDGAR FLINN, Dr. HERBERT BYRNE, the PRESIDENT, and others also discussed the paper.

Professor MCWEENEY read a paper on the Prevalence, Character, and Bacillary Richness of Tuberculous Lesions amongst Irish Dairy Cattle. His observations referred to the highest class of animal, living under ideal hygienic conditions, and kept on grass during the summer. Towards the end of lactation they were tested with tuberculin and subsequently they were sold for slaughter. A careful post-mortem examination was made and the results were controlled by the microscope, bacilli being patiently sought for in exudates and in sections of tissue. Out of 88 animals 46 were found to be tuberculous and 40 were free; two were doubtful. The commonest seat of the lesions was in the posterior thoracic and bronchial lymph glands, which were more or less affected in 90 per cent. of the tuberculous animals. The lungs were attacked in 63 per cent.; the liver was much less frequently implicated, with only 8 per cent. of cases; whilst the hepatic lymph glands were attacked in 12 per cent. The alimentary canal was very rarely affected, not one case of tuberculous ulceration of the intestines being noticed and only one case of tuberculous disease of the mesenteric glands. Not a single case of tubercle of the udder was observed. The infection seemed to have been introduced through the respiratory passages in the vast majority of cases, and the relative freedom of the intestinal tract was very remarkable. Tubercle bacilli were extremely scarce, but material in which he had failed to demonstrate the bacilli microscopically had produced in guinea-pigs acute tuberculous disease with numerous tubercle bacilli.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on May 8th, Dr. F. W. N. Haultain being in the chair.—The following specimens were shown:—Dr. J. W. Ballantyne: Two Deformed Pessaries. They were of the Albert-Smith shape and made of vulcanite; after remaining in the vagina for six weeks they became of a wide oval shape and the vaginal curve was undone. It was suggested that it was due to insufficient care in the cooling after being bent during their manufacture.—Dr. J. Haig Ferguson: Ovaries removed for Double Papillomatous Disease.—Dr. Haultain: A Gravid Uterus with Fibromyoma removed by Abdominal Hysterectomy and a Thin-walled Dermoid Ovarian Tumour which had ruptured on three occasions previously to removal.—Professor J. A. C. Kynoch (Dundee) read notes on Primary Carcinoma of the Female Urethra. The patient complained of slight irregular hæmorrhage and a vulvar tumour of three months' duration. There was no pain or great difficulty with micturition. Her previous health had always been good; she had passed through 12 labours. The urethral orifice was found to be dilated to the size of a sixpence; the edges were hard, ulcerated, and broke down easily on manipulation. The floor and lateral walls of the urethra were indurated from cancerous infiltration which extended nearly to, but did not involve, the neck of the bladder and internal sphincter. Other pelvic organs were healthy. Microscopically the growth consisted of atypical epithelium with abundant cell nests. With the guidance of a catheter the lower two-thirds of the urethra were excised by circular incision, and the edges of the remaining third were stitched to the edges of the portion of vestibule left. The patient remained comfortable for three months, when the occurrence of incontinence of urine for the first time showed extension of the disease backwards with involvement of the sphincter. No further treatment was consented to and the patient died 10 months later. On post-mortem examination the disease was found to be confined to the lower part of the bladder, there being no involvement of the surrounding parts. The urethra was one of the rarest organs ever affected with carcinoma. The number of published cases of affection of the female urethra did not exceed 30 and that of the male urethra only about 12. The urethra was exposed to conditions which were supposed to predispose to cancer. Fritsch suggested that the constant washing which the urethra received from the passing urine in conjunction with the consequent frequent dilatation and contraction of the canal prevented the cancer cells from obtaining that fixation necessary for growth and development. This probably accounted for the rarity with which the urethra was involved in cancer of the vulva even in an advanced stage. Unfortunately, this washing process was unable to prevent the invasion of the urethra by the gonococcus. Primary cancer of the urethra had its origin most frequently in the epithelium or glands of the mucosa where it formed either a vascular growth or a hard nodulated sessile tumour spreading along the floor of the urethra towards the neck of the bladder and eventually, by deeper extension, producing a urethro-vaginal fistula. The peri-urethral, or more correctly the vulvo-urethral, form had its origin in the epithelium at the junction of the urethral orifice and vestibule, from which it spread spirally round the urethral wall; it thus differed from ordinary vulvar cancer which spread superficially to adjacent structures, the urethra being seldom involved. Urethral cancer occurred mostly after 40 years of age; out of 27 cases four were under 40 years; three between 40 and 50 years; 10 between 50 and 60 years; nine between 60 and 70 years; and one over 70 years. Secondary cancer of the urethra, although more frequent, was not often seen. Gusserow found in 311 cases of uterine cancer that the urethra was only affected in 56 as compared

with 138 of extension to the bladder. The symptoms associated with urethral cancer were often slight at first, as shown in pruritus and painful micturition. When the disease was advanced a tumour or incontinence of urine was complained of. The treatment had not given very favourable results; out of 27 cases only two were reported free after three and six years. Zweifel reported a case where the neck of the bladder was involved and excised, the parts were then sutured and a vesico-abdominal fistula established by suprapubic cystotomy after the method of Witzel. Goldberg reported a case where the vagina was closed by episiokleisis after establishing a recto-vaginal fistula. In all these cases there was recurrence within 18 months.—Dr. J. B. Buist gave an address on the Art of Vaccination. Vaccination might be performed by puncture or simply by a prick; this might be done with a needle or a sharp knife, or it might be repeated over a scattered area or in close proximity to each other. Another method was by incision, when superficial cuts were made in the epidermis extending to its deeper layer. The lymph was inserted into the cutis because the apices of the papillary layer of the cutis were exposed. Another method was by lacerations and abrasions; here the epidermis was torn through by such instruments as rakes or machines set with needles. The epidermis was cut or scraped off the skin. Dr. Buist considered a lancet after the type of the bleeding lancet the most perfect instrument for vaccination that could be employed. The area of the vesicles produced was proportional to the area of the incisions; uniform results could be obtained by incisions of the same size. Dr. Buist made his only one square line for each insertion and vaccinated at four points. Adults should be vaccinated with the same care as infants and they should not be vaccinated more severely and not in any larger area. Only a small insertion was required and if the epidermis was scratched away at this point then the vaccine vesicle would have no covering and thus be imperfect. During the wide-spread revaccination recently in Edinburgh Dr. Buist inspected 1622 children under 14 years of age in the elementary schools. Out of these 800 were vaccinated with one mark, 735 in two places, 43 in three places, and 44 in four places. This showed that the usual Edinburgh method was to make one or two marks. Out of these cases 351 were severe, and mostly in those with one or two marks, none where four vesicles had been produced. These cases were, it must be remembered, second vaccinations and below 14 years, even below 10 years. The severe cases showed that either the protection given in infancy was of a very evanescent character or that something might be wrong with the method of performance. Experts had a gauge by which a good vaccination was calculated; if there was only one mark it should equal half a square inch; if two, then each should be half that area; and so on with more. But many of the cases examined were twice the approved size and must have been made by scraping off or abrading the epidermis over too large an area. Lymph was an irritant and if spread over too large an area it might cause such exudation as to cause compression of the afferent vessels and necrosis from stoppage of the blood-supply to the centre of the vesicle. If Dr. Buist used any dressing it was a powder during the second week, such as zinc powder or emol-keleet. A dressing of cotton-wool, antiseptic or otherwise, besides interfering with the normal action of the lymph, was apt to affect the normal course of the disease, as it acted as an incubation and accelerated the process. Shields of all kinds were very objectionable. As regards calf lymph, glycerine kept it from putrefaction but it did not keep it active; it deteriorated in a month. That usually sold was composed of 20 parts lymph, 40 parts glycerine, and 40 parts water. The probability was that this lymph had not the same protective power, as in the recent investigation 80 per cent. of the children under 14 years of age could be revaccinated and a great number of these were under 10 years of age, so that periodic revaccination had become necessary.

SOCIETY OF ANÆSTHETISTS.—A meeting of this society was held at 20, Hanover-square, W., on April 19th, Dr. J. F. W. Silk, the President, being in the chair.—Dr. Dudley Buxton read a paper on the Advisability of the Inclusion of the Study of Anæsthetics as a Compulsory Subject in the Medical Curriculum.[1]—In the discussion which followed Mr. Walter Tyrrell said that he was doubtful as to the necessity for lectures. At St. Thomas's Hospital the students in rotation gave the anæsthetics under his supervision. In addition a good deal of teaching was done in the special departments by his colleagues.—Mr. E. Willett thought that it was very important that the students should attend regular lectures. At St. Bartholomew's Hospital, in addition to these lectures, a special class was told off every month for instruction in anæsthetics; they were mostly senior students who were not doing any other ward work. In his opinion the defect of this plan was that it did not provide sufficient experience for the student and he did not think that a final practical examination was possible.—Dr. R. J. Probyn-Williams said that at the London Hospital the students were required to attend three lectures and then to receive practical instruction before they could obtain a hospital appointment. He thought that systematic teaching was of great importance.—Mr. Harvey Hilliard raised the question whether it was desirable for the society to approach the General Medical Council on the subject.—Dr. Harold Low thought that there should be a recognised system of teaching, that every student should be bound to receive instruction, and that a few lectures should always be given.—Dr. Sampson Handley said that at Guy's Hospital there had for some years been special appointments of "clerks to the anæsthetists," and practically every man received systematic instruction in the subject.—Mrs. Dickinson Berry said that at the Royal Free Hospital a course of six lectures was given every term and "clerks to the anæsthetists" were appointed to hold office every month.—Mr. P. Noble said that at the Middlesex Hospital, excepting those competing for a resident appointment, the students were not obliged to take out a course on anæsthetics.—Dr. G. B. Flux and Dr. Augustus H. Cook also spoke.—The President said that he believed that he could claim to have introduced the systematic teaching at present adopted at the Royal Free Hospital and at Guy's Hospital to which reference had been made, and a somewhat similar system was at present in vogue at King's College Hospital. With regard to Dr. Buxton's suggestions there were one or two matters of detail to which he should like to refer. In the first place, he considered that the teaching in nitrous oxide ought to be considered apart from the teaching in other anæsthetics; it was hardly possible to give adequate instruction in this branch of the subject in a general hospital. In the second place, although he was strongly of opinion that a short course of lectures was essential, yet a considerable degree of latitude should be permitted with regard to clinical teaching. For instance, what was possible in the matter of "clerks to the anæsthetists" in large schools such as St. Bartholomew's, the London, and Guy's, was not always obtainable at the smaller schools, but the clinical instruction in these latter was not of necessity inferior.—Dr. Dudley Buxton replied.—The meeting then resolved itself into the annual general meeting, and the following were elected officers for the ensuing year, viz:—President: Mr. Walter Tyrrell. Vice-President: Dr. Dudley W. Buxton. Treasurer: Mr. George Eastes. Elected Members of Council: Dr. Silk, Dr. Probyn-Williams, and Dr. W. D. Arnison (Newcastle). Secretaries: Dr. Low and Dr. Flux. Auditors: Mr. Harvey Hilliard and Dr. Herbert J. Scharlieb.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on May 8th, Professor Dreschfeld, past President, being in the chair.—Professor Dreschfeld described preparations from a Tumour of the Suprarenal Capsule.—Dr. W. E. Fothergill and Dr. T. M. Scott described a case of Fibro-myoma of the Round Ligament.—Dr. Marsden and Dr. F. Craven Moore showed a Preparation of Tuberculosis of the Peritoneum in a woman, aged 33 years. The disease was associated with fever of a continued type, considerable adiposity, and marked bronzing of the skin. The peritoneum was generally thickened over the parietes and viscera, whilst the omentum formed a solid flat tumour covering the front of the abdomen and having a few small hæmorrhages in its substance. On the under surface of the diaphragm were a number of porcelain-like plaques varying in size from one-eighth to one-third of an inch in diameter. In section they showed very well the structure of the tubercle with multinuclear giant cells at the periphery.—Dr. Melland showed Blood-films from a case of Leucocythæmia stained by different methods. The best results were obtained by fixing the film with formalin vapour for three minutes, staining in 1 per cent. watery solution of eosin, washing and then staining

[1] Reported in the Brit. Med. Jour., April 27th, 1901.

with saturated aqueous solution of methylene blue. This method clearly differentiated the nuclei, eosinophil, neutrophil, and basophil granules, and also the malarial plasmodia and nucleated red corpuscles.—Dr. A. Brown and Dr. Craven Moore described a case of Primary Carcinoma of the Gall-bladder and showed specimens. The patient, a female, aged 64 years, became ill with pain and tenderness in the region of the gall-bladder and bilious vomiting. A month later she became intensely jaundiced and she succumbed two months from the onset with symptoms of cholæmia. At the necropsy a firm mass of new growth was found involving the upper part of the gall-bladder and the adjacent liver tissue. The gall-bladder was shrunken and it contained two small cholesterin calculi. Secondary nodules of new growth were found in the liver and in the hilus involving there the hepatic ducts. Microscopically the growth was a scirrhous carcinoma originating from the mucosa of the gall-bladder.—Dr. Fothergill demonstrated Casts of the Uterus in so-called Spurious Abortion and in Dysmenorrhœa.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on May 3rd, Dr. Cresswell Baber, the President, being in the chair.—Dr. Barclay Baron reported on a case of Laryngeal Growth shown at a previous meeting which had now proved to be malignant.—Mr. Mark Hovell brought before the society a man, aged 61 years, from whose left vocal cord a large Epithelioma was removed by endo-laryngeal operation in 1886 and again in 1887, since which there had been no recurrence. He also showed a drawing of the growth as seen in the larynx before operation and sections of the parts removed.—The case was discussed at some length by Mr. de Santi and Sir Felix Semon, to both of whom the malignancy of the growth seemed doubtful.—Dr. F. Spicer showed a female, aged 15 years, with Absorption of the Cartilaginous Septum due to pressure from nasal polypi. The loss of cartilage was thought to be due to an abscess.—Dr. Lambert Lack showed a case of Unusual Laryngo-Pharyngeal Tumour in a woman, and a Microscopic Section of the Growth removed. The growth, which was attached to the mucous membrane over the cricoid cartilage, was removed by external operation. It was reported to be a mixed cell sarcoma.—Dr. Lack also showed a specimen of Bony Occlusion of One Nostril.—Mr. H. W. Carson showed a case of Multiple Papilloma of the Larynx.—Mr. Charles Parker showed a case of Pachydermia Laryngis which had been previously shown and thought by some to be tuberculous.—Dr. Dundas Grant showed a case of Tumour of the Base of the Tongue in a young Female. The diagnosis was thought to rest between sarcoma and thyroid tumour.—Dr. A. Thorne showed a case of Ulceration of the Tip of the Tongue, probably of a Malignant Nature.

BIRKENHEAD MEDICAL SOCIETY.—At the annual meeting of this society, held on May 10th, Dr. J. F. Blood, the President, being in the chair, the following office-bearers and members of committee for the ensuing year were elected:—President: Dr. J. Pinkerton. Vice-President: Mr. H. Laird Pearson. Treasurer: Dr. W. R. Floyd. Librarian: Mr. S. Wilkinson. Secretary: Mr. J. H. Fardon. Committee: Mr. C. S. Brewer, Mr. W. Johnstone, Dr. R. O. Morris, Mr. R. T. Hughes, and Dr. W. Leask.

Reviews and Notices of Books.

The Medical Examination for Life Insurance and its Associated Clinical Methods, with Chapters on the Insurance of Substandard Lives and Accident Assurance. By CHARLES LYMAN GREENE, M.D. St. Paul, Clinical Professor of Medicine and Physical Diagnosis in the University of Minnesota. With 99 Illustrations. London: Rebman, Limited. 1901. Pp. 426. Price 17*s.*

IN this work the author has endeavoured to include a description of the whole of the physical examination necessary in life assurance, together with the decisions that may be arrived at in that particular department of practice; hence, the book is a treatise on clinical diagnosis and examination for life assurance combined. At first the idea seems a good one, but in the volume now under consideration we cannot congratulate Dr. Greene on a successful production; neither part of the work is complete and both parts are greatly wanting in detail; the theoretical considerations are much better portrayed than the practical. It is assumed that many readers will be undergraduates, and, further, the author states in his preface that "within the past two years a considerable number of medical schools have introduced into their curriculum a special course of lectures dealing with the medical aspect of life assurance." That may be the case in America, but we have not heard of the plan being adopted in this country nor do we think it desirable.

The problems that come before the medical officer can only be solved by practical experience, and it is quite sufficient for the medical student to apply himself to the study of medicine and surgery without stepping aside to trifle with questions which demand considerable experience in the practice of his profession before they can be satisfactorily answered. If a practitioner is appointed as an examiner to a life assurance office it is presumed that he is acquainted with the ordinary means of physical diagnosis, and therefore we consider that Dr. Greene has not adopted a wise course in occupying the greater part of his book with matters which should be familiar to every senior student who has heard them thoroughly explained and seen them practically demonstrated by the physicians in the wards and out-patient departments. In short, the author has attempted too much. Nor are the chapters which deal solely with life assurance complete or explicit. The remarks on the Insurance of Substandard Lives suggest a great number of difficulties, but the way out of the pitfalls is only faintly indicated, and anyone fresh to the duties of medical examiner would only be more confused after reading Dr. Greene's remarks.

One of the most interesting chapters in the book is that on Attempts to Defraud Insurance Companies, in which an account is given of many cases of insurance fraud, either attempted or consummated. To the general arrangement of the book—that is to say, the manner in which reference is facilitated by means of heavy type and marginal headings—we give unstinted praise; the plan adopted is most useful and other authors might take the hint.

Materia Medica and Pharmacology. By DAVID CULBRETH, Ph.G., M.D., Professor of Botany and Materia Medica, Maryland College of Pharmacy. Second edition, enlarged and revised, with 464 illustrations. London: Rebman, Limited. 1901. 8vo, pp. 885. Price 20*s.* net.

THIS volume is intended more for the instruction of pharmacists and students of pharmacology than for physicians and students of the healing art. Its scope includes not only all the official medicines of the United States Pharmacopœia of to-day but also all which have at any time been official therein. There are notices, too, of allied species of organic drugs inserted with the intention of assisting students to recognise adulterations and substitutions. In addition to these are brief descriptions of the more useful of the unofficial synthetic chemical compounds. In the first edition, which was published in 1896, and which was well received everywhere, all doses were given in the United States "apothecaries" system, and degrees of temperature were expressed only in degrees of Fahrenheit. In this second edition a wise alteration has been made and all doses are given in the metric system in addition and degrees of temperature are recorded in the centigrade as well as the Fahrenheit scale. The work is valuable as a comprehensive text-book of materia medica and pharmacy, but the physiological actions of the drugs are only very briefly referred to and the medicinal uses in most cases are restricted to a mere catalogue of names of diseases. Those drugs which are poisonous have each in addition a few lines concerning

antidotal measures. There is a useful chapter on the use of the microscope in materia medica. The constitution of organic carbon compounds and the methods of their chemical preparation are given very fully and their constitutions are illustrated by chemical formulæ and symbols. The illustrations are well executed. The book is well bound and well printed and is a valuable work of reference.

Histology and Pathology: A Manual for Students and Practitioners. By JOHN BENJAMIN NICHOLS, M.D., Demonstrator of Histology, Medical Department, Columbian University, Washington, D.C.; and FRANK PALMER VALE, M.D., Assistant in Pathology, Medical Department, University of Georgetown, Washington, D.C. Illustrated with 213 Engravings. London: Henry Kimpton. 1901. Pp. 458. Price 7*s.* 6*d.* net.

NOT only have American authors been very active in producing translations of standard German works, but during the last year or two there have been very numerous original American contributions to medical literature, some of which have been very valuable and important. The book under review is one of a series—already numbering some 16 volumes—edited by Bern B. Gallaudet, M.D., demonstrator of anatomy and instructor in surgery, College of Physicians and Surgeons, Columbia University, New York. Though published as one volume, this work consists of two distinct books written by separate authors, each of whom accepts responsibility for his own part only. Normal Histology is treated in some 240 pages by Dr. Nichols, and a like space is occupied by Dr. Vale with Pathology. Obviously this compression entails great conciseness and the avoidance of all discussion of doubtful points. The authors' claim for the book, indeed, is that it presents the subjects conveniently and clearly to students and practitioners of medicine, for whom the treatise is intended. On the whole, the claim is justified, though in parts, owing to the necessary brevity, the chapters read almost as a series of definitions; this is perhaps especially noticeable in the section on General Pathology, which is dismissed in some 60 pages, on many of which illustrations take up space. The arrangement of the histological portion is that generally met with.

Commencing with the cell and its development, the elementary tissues are next considered, and finally the various systems. The section on Blood and Lymph gives a good and accurate account of the present position of our knowledge, following for the most part Ehrlich's views with regard to leucocytes and recognising the degenerate character of the red cell. In the section on the Liver the glandular structure is spoken of as masked and obscure and we fear that it will remain so even after reading the chapter. The opening remarks on the respiratory system are good and considering the limits of the book a reasonable space is devoted to the central nervous system and special sense organs.

The second half of the work is divided into two portions, treating respectively of general and special pathology. A great deal of information is crowded into the space with the consequence which has already been mentioned; the various anæmias are described in some six pages. The disease and the lesions occurring are not always clearly distinguished. Thus various organisms—the bacillus of Friedländer, streptococcus, &c.—are said to produce lesions similar to those caused by the diplococcus pneumoniæ; this is perfectly true, but they do not produce the disease as defined—"an acute infectious self-limited disease with a definite clinical course."

A good deal of space is occupied by the illustrations which are taken from various sources and serve to elucidate the text, though they suffer—probably chiefly through the printing—by comparison with those found in some recently published works. The practitioner and the student, to whom the book is addressed, will certainly find in it a large amount of information, but we fancy that even these classes of readers will think the compression somewhat severe.

Qualitative Chemical Analysis, Organic and Inorganic. By F. MOLLWO PERKIN, Ph.D. London: Longmans, Green, and Co. 1901. Pp. 274. Price 3*s.* 6*d.*

IT is refreshing to find a new departure in the ordinary text-book of practical chemistry, and when that departure is calculated to bring facts and principles together at the same time in the students' mind we welcome the step. Dr. Perkin, like most teachers, has found amongst pupils a class who begin by reading chemistry and who prove invariably to be bunglers at the bench afterwards, and a class who carry out practical examination by following the sign-post, so to speak, of an analytical chart without any knowledge of principles. Dr. Perkin's endeavour has been to write a book in which theory and practice are more or less dovetailed. We agree with the order in which he has presented the analytical and theoretical considerations. The chapter on Reactions in Solution is excellent and brings the reader into contact with the modern theory of solution. The nomenclature suggested by Faraday for the old theory, which, curiously enough, expresses exactly so appositely the modern interpretation, is retained. Faraday called the radicles "ions," and the word "cations" is used to express the positively charged "ions" moving with the positive current, while the negatively charged "ions" moving against the positive stream are called "anions." The effect of the electric current in decomposing salts in aqueous solution is, according to modern theory, as follows. The salt is already dissociated by the water. The electric current merely neutralises the charges on the electrified radicles and thus sets them free to form new whole molecules. The radicles which are positively charged move towards a negatively charged body, while the negatively charged radicles migrate towards a positively charged conductor. The modern explanation of silver salts giving a precipitate with a soluble chloride is as follows. A solution of silver nitrate is a reagent for the detection of the anion Cl, and a solution containing the anion Cl—for example, hydrochloric acid—is a reagent for the detection of the cation Ag. But silver nitrate is clearly not a reagent for the element chlorine, for silver nitrate gives no precipitate with a solution of potassium chlorate because in solution potassium chlorate is dissociated into the cation K and the anion ClO_3. This method of teaching is a decided advance on the average text-book and is a most commendable feature of Dr. Perkin's plan. The book deals with both inorganic and organic analysis, the methods of detection and separation being identical for the most part with those described in previous practical handbooks.

LIBRARY TABLE.

The History of Ancient Gynæcology. By W. T. STEWART MCKAY, M.B., M.Ch. London: Baillière, Tindall, and Cox. 1901. 8vo. Pp. 322. Price 7*s.* 6*d.* net.—The history of obstetrics has been fully told by Jacques de Siebold, but so far no one has attempted a similar task for gynæcology. We are so accustomed to regard the latter branch of medicine as of comparatively recent date that it is interesting to note how many are the references to diseases of women in many of the oldest medical writings. Beginning with the Papyrus Ebers, the oldest work extant on Egyptian medicine, Dr. McKay has gone through the works of the Hindu, the Greek, and the Roman writers down to the time of Paulus Ægineta. The results of his labours, carried out

amidst a good many difficulties, are embodied in the present work. To enable his readers to obtain a comprehensive grasp of the subject he has given a *résumé* of the whole at the end of the book. The author shows that the ancients were familiar with the lithotomy position and employed the two methods of dilating the cervix in common use at the present time—viz., the rapid by dilators and the slow by tents. Their spongetents with string attached differed in no way from those of Simpson, and an instrument fulfilling all the functions of his sound was in use in the time of Hippocrates and by the Arabians. It is interesting to read, in view of the recent reintroduction of the application of superheated steam to the interior of the uterus, that in Ambroise Paré's works there is a figure with a full description of an apparatus for fumigating the womb. The book, which is of much interest, has the serious defect of possessing no index.

Diet and Food. By ALEXANDER HAIG, M.A., M.D. Oxon., F.R.C.P. Lond. Third edition. London: J. & A. Churchill. 1901. Pp. 118. Price 2*s.*—Dr. Haig's views on uric acid as a factor in the causation of disease are well known and in the present volume he teaches the doctrine of what he describes as a uric acid free diet and to that end gives recipes. These recipes mean the exclusion of all animal flesh, alcohol, tea, coffee, and similar alkaloids containing vegetable substances from the diet, rigidly excluding, as he says, "the poisons which cause friction and jar in the machinery." We fear the following daily regimen would not appeal to many people. Breakfast, one pint of milk with a plate of potatoes, bananas, pears, apples, plums, or other fresh fruit. Lunch, vegetable soup made with milk, plate of potatoes, two ounces of cheese eaten with potatoes and other vegetables in season, stewed fruit or tart, fresh fruit; one pint of milk drunk during the meal. Dinner, much as lunch, one pint of milk, half an ounce of cheese. This is all very interesting theoretically and no doubt chemistry and physiology teach that this diet would be sufficient for the maintenance of the human organism, but how sadly the palate would suffer, and the palate may surely be reckoned as a dietetic factor. What Dr. Haig classes as the diets which are uric acid free have been employed as food for generations without affecting the duration of life appreciably. Intemperance is, of course, responsible for autotoxic processes, but then the intemperance of temperance is the other extreme which would cut out of life many innocent joys.

Dental Metallurgy: a Manual for the Use of Dental Students and Practitioners. By CHARLES J. ESSIG, M.D., D.D.S., revised by AUGUSTUS KOENIG, B.S., M.D. Fourth edition, revised and enlarged. London: Henry Kimpton. 1901. Pp. 286. Price 7*s.* 6*d.*—Metallurgy is, of course, an essential subject in the dental student's curriculum, and the issue of a separate work devoted to the chemistry and physics of the metals is a need supplied. Though the properties of the metals are described in chemical textbooks, yet they are not described with any particular bearing on dentistry. The book before us, therefore, will be welcomed by dental students, inasmuch as it presents just those facts about the metals and their compounds which concerns his particular vocation. The authors are teachers of the subject in the University of Pennsylvania and their experience of the needs of dental students is valuable. The chapter on Amalgams will be particularly useful, while the method of analysis of alloys will help the student to ascertain their composition. Following upon the description of mechanical methods the metals used in dentistry are individually dealt with. Dentistry, like other branches of professional work, is advancing rapidly and the student and dental practitioner must keep pace with these advances They will find that a perusal of this book will place them *au courant*. We note that the authors give references more than once to Percey's metallurgy. We presume they refer to Dr. Percy's well-known work.

The Mind of the Century. London: T. Fisher Unwin. 1901. Pp. 142. Price 2*s.*—This is a reprint of a series of articles which appeared in the columns of the *Daily Chronicle* towards the close of the last century. The sketches are necessarily brief and imperfect and the title is presumptuous. The series of essays gives but a scant notion of the mind of the century. It could not be otherwise when "Applied Science" is dismissed in nine pages, "Natural Science" in not quite nine pages, "Medicine" in nine pages, and so on. In the section on Applied Science the author touches merely the fringe of the great subjects involved, and he even omits any mention at all of the influence on industrial processes of chemical discoveries. The book would better be described as a conspectus of the progress of the past century.

JOURNALS AND MAGAZINES.

Birmingham Medical Review.—In the opening article of the May number Mr. George Heaton discusses the surgery of the stomach in much detail, describing operations for perforated ulcer, subdiaphragmatic abscess, gastro-jejunostomy, and the treatment of cancer of the stomach. Sir James Sawyer recommends unguentum ranunculi ficariæ in the treatment of conditions of a hæmorrhoidal character affecting the anal margins. The ranunculus ficaria, popularly known by the names of lesser celandine and pile-wort, is a well-known British wild perennial plant. The plants, gathered when they are blooming in the spring, are cut into small fragments and kept immersed in melted pure hog's lard at a temperature of about 100° F. in the proportion of one part by weight of the plant to three parts of lard for 24 hours. At the end of that time the portions of infused herb in the melted lard are subjected to sufficient pressure to produce the yielding of their juices to the fatty infusion, which infusion is thereupon strained and allowed to solidify. The ointment should be bright olive-green. Care should be taken not to raise the temperature of the mixture too high lest the colour be spoiled. Dr. E. A. Sadler records a case in which 20 grains of sulphonal produced drowsiness on the afternoon of the day after that on which it was taken, and on the following day—i.e., the second after taking the drug—pyrexia and semi-coma.

Quarterly Medical Journal.—In the May number Dr. James Kerr of Bradford records 18 cases of Tobacco Amblyopia and gives an analysis of 51 additional cases. Dr. George Lorimer of Buxton writes on Gout in connexion with Lead Impregnation. Mr. R. J. Pye-Smith describes a Reproduction of the Tibia after Removal of the Diaphysis for Acute Infectious Periostitis and Osteomyelitis. The formation of new bone is shown in a skiagram.

Grèce Médicale.—In the April number Dr. Triantaphyllides of Batoum records a case of Uncontrollable Vomiting Treated by Suggestion. The patient was 30 years of age and in the first month of her seventh pregnancy. Unsuccessful attempts to induce premature labour had been made. Dr. Triantaphyllides on taking charge of the case assured her that abortion had taken place and that the uterus was empty. He stopped all local treatment and gave bread pills every three hours. The vomiting soon ceased almost entirely. Labour followed at term. Dr. M. Mangakis of Athens mentions a case in which a girl, aged 18 years, twice presented symptoms of vicarious menstruation from the right ear and nostril.

Analytical Records

FROM

THE LANCET LABORATORY.

(1) GERM-FREE INVALID MILK; AND (2) GERM-FREE MOTHERISED MILK (CRYSTAL BROOK BRAND).

(J. CARSON, CRYSTAL BROOK FARM, THEYDON BOIS, ESSEX.)

THESE specimens are the products of a milk farm kept under strict scientific and sanitary control. In addition the milk is obtained from prize Jersey cows which are periodically examined, each having successively withstood the tuberculin test. The farm, which we have visited, is situated at Theydon Bois in Essex amongst excellent pastureland and in a very healthy environment. Extraordinary pains are taken to produce a healthy milk and a milk of excellent quality. Our analysis of the invalid milk was as follows: total solids, 14·10 per cent.; fat, 5 per cent.; non-fats, 9·1 per cent.; and mineral matter, 0·72 per cent. The richness in cream is a remarkable feature of the sample. The "motherised" milk gave the following results of analysis: total solids, 12·02 per cent.; consisting of milk sugar, 6·32 per cent.; fat, 3·37 per cent.; casein, 1·79 per cent.; and mineral matter, 0·54 per cent. This composition accords with genuine mother's milk except in regard to the mineral matter which cannot be avoided owing to the higher percentage of salts in cow's milk. The process of "motherisation" and sterilisation are efficiently conducted and, what is of the greatest importance, these steps are begun directly after milking, the risk of contamination being thus reduced to a minimum. Prior to these processes the milk is filtered. As might be expected the milk is excellent in all respects, one satisfactory feature being that even after several days it keeps perfectly sweet after the stopper has been removed. This is excellent evidence in favour of the freedom of the milk from all organised impurities. We observed on the occasion of our visit to the farm that the dairies are separate from any part of the farm buildings or cow-houses. Such a farm is an excellent example of milk-farming, being conducted on correctly hygienic lines, producing not only milk of a high quality but milk entirely free from any disease-producing impurities. In view of these results it is not surprising to learn that the milk has proved highly satisfactory in the feeding of infants and invalids.

FRUIT CHUTNEY.

(T. H. KESTERTON, 200, STRAND, LONDON, W.C.)

This chutney contains an assortment of fruits and is manufactured on a farm in Sussex. It is not very much like Indian chutney and, in our opinion, not so good. Its flavour is very mild and lacks piquancy. It is evidently made from good materials and we could find no objectionable antiseptics present or any sign of metallic contamination. Doubtless this mild form of chutney may suit many tastes, but in our opinion it requires more zest as a sauce or condiment; however, this is an improvement which could easily be made.

TABLOIDS: (1) BETA-NAPHTHOL COMPOUND; (2) IRON CITRATE COMPOUND; AND (3) CODEINE AND NUX VOMICA.

(BURROUGHS, WELLCOME AND CO., SNOW-HILL-BUILDINGS, LONDON, E.C.)

Beta-naphthol is well known as an anti-fermentative in dyspepsia and its association with wood charcoal and peppermint should be valuable in digestive disturbances. The compound beta-naphthol tabloid contains one grain of beta-naphthol, four grains of wood charcoal, and half a minim of oil of peppermint. The tabloid iron citrate compound presents a well-known formula in a convenient form, whilst the purity of the ingredients is guaranteed. The tabloid is sugar-coated and each contains three grains of citrate of iron and ammonia, one grain of sulphate of quinine, and one-sixtieth of a grain of arsenious acid. Lastly, the tabloid codeine and nux vomica contains one grain of phosphate of codeine and a quarter of a grain of extract of nux vomica. The formula is designed for diabetic patients with a view to diminishing the excretion of sugar—a property of codeine.

(1) SOLUTION ADRENALIN CHLORIDE; AND (2) SUPRARENAL LIQUID WITH CHLORETONE.

(PARKE, DAVIS, AND CO., 111, QUEEN VICTORIA-STREET, LONDON, E.C.)

Adrenalin is described as being the active principle of the suprarenal gland separated by a chemical process. Adrenalin occurs in tiny fusiform crystals which apparently dissolve easily in hydrochloric acid producing a definite chloride. The solution is a cardiac and vaso-motor stimulant, astringent, and hæmostatic. The solution contains one part of the chloride dissolved in a thousand parts of normal sodium chloride solution. It is said to be employed successfully for performing bloodless operations, and so powerful is the suprarenal principle that a single drop of a solution of the strength of 1 in 10,000 instilled into the eye blanches, it is stated, the conjunctiva, ocular and palpebral, in from 30 seconds to one minute. We have already described the local anæsthetic and antiseptic properties of chloretone in THE LANCET of Jan. 13th, 1900, p. 106. Those properties are taken advantage of in the preparation of a suprarenal liquid to which chloretone is added, the result being a preparation combining the local anæsthetic and antiseptic properties of chloretone with the extraordinary styptic qualities of the suprarenal extract.

EXTRAIT DE MALT (BIÈR DE SANTÉ).

(AGENCY: W. P. GOODALE, 64, LEADENHALL-STREET, LONDON, E.C.)

This is a somewhat syrupy fluid with strong malt flavour resembling that of lager beer. Apparently it is derived by concentrating lager beer by evaporation. It is only slightly alcoholic, as will be seen from the following results of analysis which we obtained: absolute alcohol, by weight 2·06 per cent., by volume 2·58 per cent., equal to proof spirit 4·52 per cent.; and malt extractives, 20·37 per cent. The liquor is undoubtedly nutritious, but somewhat mawkish to the taste. According to our experiments it is without digestive action upon starch, the diastase probably having been destroyed by heat during concentration. It contains all the extractives of malt, including the sugars, dextrine, nitrogenous principles, and salts. On this account it is, of course, a food of some value, but we fail to see its advantage over a good preparation of malt extract, especially as it exhibits no diastasic properties.

(1) CODEINE NEUTRAL TARTRATE; AND (2) APOMORPHINE HYPOPHOSPHITE.

(J. F. MACFARLAN AND CO., ABBEYHILL CHEMICAL WORKS, EDINBURGH, AND LONDON.)

The specimens sent to us offer important advantages for hypodermic purposes, first because they are more soluble in water than the ordinary salts, and secondly because they are not acid but neutral. The codeine neutral tartrate is more soluble than the acid phosphate of codeine, the solubility being about one part in two parts of water, and the dose is from a quarter of a grain to two grains. The hypophosphite of apomorphine is soluble in about six parts of water, whereas the hydrochloride is only sparingly soluble, one part dissolving in 50 parts of water. The hypodermic dose of apomorphine hypophosphite is from one-sixteenth to one-sixth of a grain.

THE LANCET.

LONDON: SATURDAY, MAY 25, 1901.

The Approaching Meeting of the General Medical Council.

WE are probably safe in assuming that the next meeting of the General Medical Council is anticipated with exceptional interest. The Executive Committee meets on June 3rd, the day preceding that on which the General Medical Council meets. It has as one of its chief duties the arrangement of the business of the Council for the first day of the session. It will do a great service if it can contrive to secure that the early days of the meeting shall be used for the discussion of the really important questions which demand the attention of the Council, and can prevent the waste of time which has contributed so largely in producing the present unsatisfactory position of the Council's finances. There are topics which present themselves for consideration session after session and year after year. These hardy annuals should be disposed of on some principle and with some firmness or they will bring the Council into discredit. The following subjects will call for attention from the Council. The financial position of the General Medical Council and of the branch councils will be considered in the light of the special report from the expert selected by the treasurers in accordance with the resolution of the Council at its meeting last December; the modest amendment of the Medical Acts practically agreed on, as between the medical authorities and the General Medical Council on the one hand and the Privy Council on the other; the recognition of foreign or colonial diplomas, a subject which has been brought before the Council by a communication to the Colonial Office asking for the recognition of the medical degree of the University of Malta; the examinations of the Apothecaries' Hall of Dublin, the special inspection of which has been a costly charge on the Council for the last few years; the list of exemptions granted by the medical authorities in any part of their examinations held in 1897, 1898, and 1899; and the disciplinary cases referred from last session, with any cases that may have arisen in the interval, to be reported on by the Penal Cases Committee. This does not pretend to be an exhaustive list of the subjects which must find a place in the programme of the Council—indeed, we have omitted one of the most important—but it is sufficiently long to show the need for a methodical routine of procedure on the part of the executive and business committees which are largely responsible for the order of business.

It is, in our opinion, impossible not to see that the financial position of the Council calls for serious consideration. There may be nothing alarming in the financial position of the Council, but it is obvious to all, on the showing of the Finance Committee, that the expenditure of the Council is increasing, while its reliable income remains practically stationary. The General Medical Council has very little income. Its main wealth consists in its power to demand from the branches the sum needed to pay its expenses. The growth of this demand is the serious element in the financial statement. Making allowance for the fact that the General Medical Council holds a good property in its offices and house in Hanover-square, though for the present heavily mortgaged, it is impossible to view without concern the growing expenditure of the Council or to doubt that some means ought to be devised for lessening it if the English and Scottish branches are not to be impoverished as the Irish branch has already been. It is not enough to say that this state of matters arises from the addition of seven members to the Council since 1858 and the introduction of topics for discussion which seldom arose in the early days of the Council. The Council cannot afford to be out of sympathy with the profession which supplies its funds. It may exist primarily for the protection of the public, but it has charge of the professional status of the medical man and must turn a willing ear to all matters concerning the maintenance of that status. It cannot decline to discuss questions which affect the *morale* of the profession without abandoning one of its statutory functions. But it must find some way of doing its work and keeping its expenditure within its income. Theoretically this would best be secured by abolishing the individual representation of the licensing bodies and so moderating the size of the Council, but this implies legislation that would be stoutly resisted by each and all of the medical institutions, and we have to look elsewhere for a feasible remedy. Meantime all members of the Council can add to its credit and their own by discouraging loose and unpractical work. The fees of the Council constitute its chief expenditure—and we hasten to say that it would be a quixotically foolish economy for the Council to do its work without being paid for its labours. But it would stamp them as worthy of the trust reposed on them if they would confine their words to the most modest dimensions, debate questions of practical importance only, and arrive as quickly as possible at definite courses of procedure. The Council cannot afford to disregard questions of professional conduct which have arisen in new forms of late years. But it should carefully and quickly ascertain what are the limits of its own duty and power and then firmly resolve to keep within them. Otherwise expenditure will continue to grow in a greater ratio than income.

There remains for notice one subject that is sure to engage the attention of the Council very seriously, that is the position taken up towards it by the Royal College of Physicians of London and the Royal College of Surgeons of England in respect of the teaching of the preliminary sciences. We must express a hope in regard to this dispute that both parties will come to the Council with a disposition to find some way of ending it. The General Medical Council has not always been happy in its relations with the licensing bodies, and it really seems to have no jurisdiction over the Colleges in this matter. On the other hand, the teaching of the preliminary sciences is fundamental and affects the whole course and efficiency of the medical curriculum, and the Privy Council may think

the General Medical Council right in trying by its regulations to influence the curriculum required by the Colleges. One thing is clear, that the dispute should be settled amicably between the Council and the Colleges. It is bad for the medical profession that difference of opinion between the Council and the Colleges should be pushed so far as to necessitate reference to the Privy Council, while recourse to law would be simply deplorable in the loss of prestige to one party or the other that would be entailed.

The Re-organisation of the Army Medical Service.

SIR JOHN BATTY TUKE put a question to the Secretary for War in the House of Commons on May 17th as to whether it was proposed to adopt the suggestion, contained in the report of the Royal Commission on the South African Hospitals, that a departmental or other committee of experts should be appointed to decide upon the steps needed to effect certain reforms in the Royal Army Medical Corps; and, if so, whether he was prepared to state the composition of such committee? Lord STANLEY, Financial Secretary to the War Office, said, in reply, that the Secretary of State was preparing various proposals to submit to a committee of experts, but that the composition of the committee could not at present be stated. That the subject is one of national importance we need not point out; nevertheless, we do not regret any delay that may be necessary in order to have a full, free, and independent inquiry started. Much will, of course, depend upon the selection of a president and the composition of the committee. It goes without saying that the Army Medical Service will be represented. For in any attempt to adjust the medical requirements and provisions to the needs of the Empire and modern war it is only those who are practically, as well as theoretically, acquainted with the existing systems of military organisation and administration who can be in a position to furnish the committee with reliable information, and it will require men of military training to appreciate their evidence. But so that this aspect of the question is duly represented we see no reason why the military, or military medical, element should be the predominating one. There is no objection to the civil element being largely represented. What is required is that the committee should comprise men of independence of character and business capacity.

With a committee so constituted we may be sure that no schemes or proposals which did not commend themselves to educated men of ability and common-sense would be entertained. The inquiry should be of a sufficiently deliberate character to enable the committee to arrive at some definite conclusions and recommendations on which a scheme of army medical reform may be formulated by the Government, so sound and well-balanced that it has a good chance of being accepted as reasonable and just by the public and the medical profession, civil and military alike. The problem is confessedly a difficult one. If the committee can succeed in solving it they will render a great public service. They will certainly likewise earn the gratitude of the medical profession, which is tired of seeing the Army Medical Service so frequently aspersed and identified with failure, notwithstanding that the individual medical officers composing it are at the same time extolled for zeal, devotion, and bravery displayed in their war duties. In the meantime it is officially announced that various proposals are being prepared by the War Office for submission to the forthcoming committee, who will be furnished from the beginning with plenty of food for reflection. An enormous amount of evidence that reform is needed, and an equally large amount of suggestions—of varying value, by the way, and not always emanating from responsible persons—with regard to the directions that reform should take have appeared in the public press, while the British Medical Association have recently contributed most interesting material for consideration in the shape of a provisional report on the Army Medical Service. This report, which contains detailed recommendations for the re-organisation of the service, has been drawn up by a sub-committee of the Parliamentary Bills Committee of the Association, and, having been adopted by the Council of the Association, was published as a supplement to the *British Medical Journal* of May 4th last. The report has a wide scope and is of an elaborate and exhaustive description. It has evidently been industriously and carefully drawn up and contains a good deal of useful and pertinent information. If some of this is not exactly new to the medical profession, it will all bear repeating; and the grievances of the Army Medical Service are of long standing. We do not know whether the sub-committee's inquiries were addressed to all the universities, colleges, and medical schools in the United Kingdom, but replies have been received from 33 of them, of which a list is given and the results are thrown into tabular form. The sub-committee proceed to group, analyse, and summarise these replies under certain general and specific heads and are thus able to formulate a series of proposals for the re-organisation of the service which have received the imprimatur of a number of representative bodies.

Adverting to the series of articles which have recently appeared in THE LANCET in connexion with the report of the Royal Commission on South African Hospitals we hope that, among other things, one point will not be lost sight of either by our readers or by the promised committee of experts. We are entirely in favour of remedying what we have always regarded and characterised as a grave defect in the Army Medical Service. Nothing is held out as a reward for professional or scientific attainments, and so little is done in the way of the selection of medical officers for promotion to the higher posts of the service for their merits, instead of as a mere matter of seniority, that it might be imagined that no regulations had ever existed especially providing for selection where it is deemed proper. That a process of selection should be properly put into action forms one of the principal points in the scheme of re-organisation set forth in these columns. After dwelling upon the importance of giving medical officers every practicable facility for professional study and saying that the Director-General should have such a record of the capacities, qualifications, and characters of his officers as to enable him at any moment to put his finger on the right men to fill the right places, we pointed out that promotion by selection had practically been neglected or

fallen into abeyance, and added that "there should, in our opinion, be far more rewards held out for professional merit." To make the Army Medical Service a pure seniority service is, in our opinion, tantamount to passing a sentence of death upon it. Up to a certain rank, and in order to deal fairly and justly with officers of average ability and attainments with an average amount and quality of service, seniority should be the rule; but for all above that rank selection should be the rule. Medical officers who have rendered exceptional service (professional, scientific, or otherwise) or who are in possession of high qualifications should, if they are to be rewarded by promotion, have their names placed upon a separate list, or the step in rank should be of the nature of brevet rank, otherwise their reward will be obtained at the cost of their brother officers over whose heads they will pass and not at the expense of the State, as should be the case. We need scarcely say that other things are required besides high professional or scientific attainments to qualify a man to make a good administrative officer. We are fully alive also to the fact that promotion by merit may be worked to mean, as it is so often alleged to mean, interest or something other than merit, and we would consequently have the grounds of selection set forth and recorded and the record kept at the headquarters of the Army Medical Service, open to the inspection of all whom it might concern. Jobbery, and even the suspicion of jobbery, must be avoided.

The Festival Dinner of the Polyclinic.

THE festival dinner of the Medical Graduates' College and Polyclinic was held at the Hotel Cecil on May 22nd. The Leader of the House of Commons presided and was supported by men eminent in many departments of human endeavour, politicians, social celebrities, Church dignitaries, peers, and distinguished representatives of the colonies. The occasion was noteworthy in several ways, for the institution whose promoters have received an unmistakeable token of encouragement is novel in this country, while the public have never before been so frankly taken behind the scenes of medical education and been shown its difficulties, its limitations, and its great aspirations. All of us looking back on our student days will remember the time when everything was strange and new, when the intricacies of anatomy, chemistry, and physiology taxed our memories, and the unwelcome prospect of examinations in due course engrossed our thoughts. With the students of the Medical Graduates' College this is not so. They have mastered the essentials of their profession and their only object now is to increase the stock of experience which they have gained, to systematise their knowledge, and to train themselves in the art of turning it to practical account.

The need of such an institution is a very real one, for medical science has become so extensive and has developed itself in so many different directions that the well-equipped practitioner requires to know at least something of almost every department of physics and biology, and must do what he can to seize the leading points of an enormous technical literature. Those who do not hold any hospital appointment and are absorbed in the multitudinous cares of professional life may well be excused if they fail to realise these ideals, but the inevitable penalty is that if there is no progress there must be retrogression, so that as the years advance a period of "rustiness" must arrive and the veteran find himself at a disadvantage as compared with those who are destined to be his successors. Post-graduate study, participation in the work of medical societies, and judicious reading are the most available antidotes. The young man, who has satisfied the examiners and received his diploma, soon discovers that the conditions which he encounters in private practice are not just the same as those with which he was familiar in the hospital. For one thing, the hospital patients are themselves to a certain extent a selected class—either actually suffering from some of the worst ills to which flesh is heir, or at least presenting symptoms of impending trouble which, when analysed by a skilful teacher, may form the groundwork of an interesting study. In private practice, however, the clinical material is less concentrated, so to speak; minor ailments prevail, and surgical cases are less common than might be expected; but the practitioner must never forget that a good store of sound clinical knowledge is of the first importance to him. The art of reading symptoms aright and the ability to forecast the probable course of an illness or the consequences of an injury must be diligently cultivated. And for the encouragement of the faculties of observation and the acquisition of new ideas invaluable opportunities are afforded at the Medical Graduates' College. Post-graduate study, whether called by that name or not, must of necessity always exist in some form or other, for medicine and surgery are inherently progressive, fresh discoveries are every now and then superseding currently accepted views, and new methods of diagnosis are constantly being introduced. Without going so far back as the pre-anæsthetic days, who of us that has passed middle age does not remember the time when the clinical thermometer was an unfamiliar object, when the microscope was scarcely applied at all in clinical work but only in the anatomy class-room, when the recognition of anæmia by examining the blood was only beginning to be talked about? At that time the rapid and secure identification of tuberculosis, diphtheria, and malaria by means of their microbes was unthought of, and no such prompt diagnosis of plague as is now a matter of daily routine was possible. These aids to the practitioner in his struggle with disease depend on the employment of instruments of precision and the utilitarian application of laboratory methods, the latest acquisition in this field being the Roentgen rays, by the help of which many obscure surgical problems are promptly solved. Surgery itself has been revolutionised in every department by Lord LISTER, whose discoveries were given to the world about 35 years ago, and during the same period the modern methods of dealing with epidemic disease other than small-pox have been evolved by the labours of many sanitarians. On the notorious success of the sanitarians we need not dwell.

But developments of medicine as they occur require to be brought to the notice of the medical profession as a whole if the public is to obtain full benefit from them. The professors and teachers of the great medical schools and

their students enjoy opportunities which the Polyclinic aims at affording to all medical men. For which reason we think the Polyclinic deserves to obtain the considerable measure of public support which Mr. BALFOUR in an eloquent speech, reported elsewhere in our columns, demands for it. Mr. BALFOUR'S suggestion that we as a nation have of late fallen behind Germany, France, and Italy in the ardour of our pursuit of knowledge should give all thoughtful people a subject for reflection. Do we lack the imagination required to show what apparently remote and abstract studies do for the service of mankind? asks the most philosophic of our statesmen. And he evidently expects a positive answer. The spirit of research, of ardent uncompromising intent to get at the truth of things, stimulates the work of British medicine as vigorously now as in the past, and as conspicuously here as it does in any other country. But we are not certain that our lay fellow-citizens can clear themselves from the reproach of being apathetic to the developments of medical science. The Englishman, proud of being practical, likes to pay for results, and in medicine tangible results cannot always follow honest work. We hope that Mr. BALFOUR'S words may help the public to take a large view of medical science, and may influence them to see, and persuade them to support, honestly directed medical research. It will be seen on reference to his speech that Mr. BALFOUR grounded his appeal for funds upon three separate heads, and that we have only referred to his arguments for the endowment of research. This is because we feel that the scope of the Polyclinic's work must be more defined, and its position towards the public and the medical practitioner as a charitable institution made more exactly clear, before it can expect the unanimous support of the medical profession.

Annotations.

"Ne quid nimis."

THE ANNUAL REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD.

THE annual report of the medical officer of the Local Government Board for the year 1899–1900, in supplement to the Board's annual report, has made its appearance and relates almost wholly to the proceedings of the medical department in the latter months of the late Sir Richard Thorne's tenure of office. Among the appendices will be found, as in previous years, some extremely interesting articles. Many of these have been reviewed in our columns as reports of assistant medical officers of the Board to the principal medical officer, and taken as a whole they constitute a summary of the public health administration of the country which is of the utmost value. An article of great interest is that supplied by Dr. R. Bruce Low upon the progress and diffusion of the plague in 1899–1900. This is in addition to a short account given in Sir Richard Thorne's last annual report showing the progress and diffusion of plague throughout the world from 1879 to 1898 as far as records of the manifestation of the disease could be obtained. This valuable contribution is followed by a memorandum by Dr. Bruce Low upon the precautionary measures taken in 1899 to prevent the importation of bubonic plague into England and Wales. The marked success which has attended the sanitary measures of Great Britain and Ireland in excluding plague from this country, although we remain in touch through our widespread commerce and far-reaching possessions with a dozen infected centres, redounds to the credit of the Local Government Board. We think that every medical man would do well to read these papers and see how the good results have been obtained. We shall as usual deal with the report in a short series of articles.

THE INDIGESTION OF LONELINESS.

AT a time like the present, when the marrying age of the average man of the middle classes is being more and more postponed, the physical ills of bachelordom come increasingly under the notice of the medical man. It is not good for man or woman to live alone. Indeed, it has been well said that for solitude to be successful a man must be either angel or devil. This refers, perhaps, mainly to the moral aspects of isolation, and with these we have now no concern. There are certain physical ills, however, which are not the least among the disadvantages of loneliness. Of these there is many a clerk in London, many a young barrister, rising, perhaps, but not yet far enough risen, many a business man or journalist who will say that one of the most trying features of his unmarried life is to have to eat alone. And a premature dyspepsia is the only thing that ever takes him to his medical man. There are some few happily disposed individuals who can dine alone and not eat too fast, nor too much nor too little. With the majority it is different. The average man puts his novel or his paper before him and thinks that he will lengthen out the meal with due deliberation by reading a little with, and more between, the courses. He will just employ his mind enough to help, and too little to interfere with, digestion. In fact, he will provide that gentle mental accompaniment which with happier people conversation gives to a meal. This is your solitary's excellent idea. In reality he becomes engrossed in what he is reading till suddenly finding his chop cold he demolishes it in a few mouthfuls; or else he finds that he is hungry and paying no attention to the book, which he flings aside, he rushes through his food as fast as possible, to plunge into his armchair and literature afterwards. In either case the lonely man must digest at a disadvantage. For due and easy nutrition food should be slowly taken and the mind should not be intensely exercised during the process. Everyone knows that violent bodily exercise is bad just after a meal, and mental exertion is equally so. Wise people do not even argue during or just after dinner, and observation of after-dinner speeches will convince anyone that most speakers neither endure themselves nor excite in their hearers any severe intellectual effort. In fact, the experience of countless generations, from the Red Indian of the woods to the white-shirted diners of a modern party, has perpetuated the lesson that a man should not eat alone, nor think much at this time, but should talk and be talked to while he feeds. Most people do not think much when they talk, and talking is a natural accompaniment of eating and drinking. How does it fare with the many solitary women of to-day? No better, we know, than with the men, but differently. Alone or not a man may generally be trusted at any rate to take food enough. (We suppose, of course, that he can get it.) With a woman it is different. She is more emotional, more imaginative, and less inclined to realise the gross necessities of existence. Therefore the woman doomed to dine alone as often as not does not dine at all. She gets dyspepsia

because her digestion has not sufficient practice; a man gets it because his functions practise it too often in the wrong way. Worst of all, perhaps, is the case of the solitary cook. In the myriads of small flats in London there are thousands of women "doing" for their solitary masters or mistresses. These women, whose main occupation is to prepare food for others, find it impossible to enjoy, or even to take, food themselves. As confectioners are said to give their apprentices a free run of the stock of the shop for the first few days, knowing that it will effectually cure appetite afterwards, so the women who are always occupied with buying and preparing food grow unable to use it for themselves. These people suffer from dyspepsia, which is cured if somebody else manages their kitchen for a week, allowing them to take meals without preparing them. It needs no moralist to declare the evils of solitariness. Man and woman is a gregarious animal. Physically and intellectually we improve with companionship. Certainly it is not good to eat and to drink alone. It is a sad fact of our big cities that they hold hundreds of men and women who in the day are too busy and at night too lonely to feed with profit, much less with any pleasure.

THE MEDICAL ASPECTS OF CANCER OF THE BREAST.

IN the first two numbers of *American Medicine* Professor Osler has published a useful article on the above subject. In cancer of the breast metastasis in the bones and other parts may occur at any period, early or late. Mr. T. W. Nunn has described the case of a woman, aged 27 years, who had in April cancer of the left breast which she had noticed for several months. There was left ptosis in June; subsequently paraplegia occurred. On the other hand, Professor Osler observed metastasis as late as 18 years after the discovery of the breast tumour. He divides the secondary manifestations into cerebro-spinal, thoracic, and abdominal. The skull and brain are not often affected. The spinal group is, perhaps, the most important. Billroth remarks that cancer of the spine is seen particularly in the atrophic form of scirrhus. From a diagnostic standpoint this fact is of great importance, for the patient may overlook the primary growth and come under treatment for the spinal symptoms which may be misunderstood by the unwary. The pains may be regarded as rheumatic, neuralgic, or hysterical. Charcot insists that in any case of painful paraplegia, particularly if the patient is a woman, atrophic indolent scirrhus of the breast should be looked for. Referring to one case he says: "Struck by special characters presented by the pain and calling to mind some of the facts which I had observed at the Salpêtrière, I asked if there was not a lesion of the breast. The reply was negative, but, to the great astonishment of the patient, I found one of the breasts retracted with an atrophic scirrhus." Professor Osler describes a similar case: a woman, aged 52 years, had been complaining for five or six months of severe pains in the neck which were thought to be neuralgic and rheumatic. She looked well and was fairly nourished, though she had lost considerable weight. As she rested in bed she had no pain, but when she attempted to move the head she felt pain in the back of the neck. She walked well, but carried the head stiffly. The knee-jerks were increased. Scirrhus of the left breast was found which at once threw light on the case. Cruveilhier described spinal cancer and gave the condition the name of "paraplegia dolorosa." Charcot has given a very clear account of it in one of his lectures. The main features are intense pains in the sides and down the legs, or, if the secondary growths are higher, in the arms. There are areas of anæsthesia; sometimes there is the so-called anæsthesia dolorosa, and herpes zoster may break out. One feature of the pain is characteristic: the patient may remain in a comfortable position for an hour or more, then the slightest movement of the spine produces torment. There may be extreme symptoms of pressure on the nerve roots without paraplegia. When pressure on the cord begins there are often painful spasms in which the legs are drawn up. Ultimately there may be complete paraplegia. A remarkable fact is that the spinal symptoms may disappear and the patient recover from a desperate condition of "paraplegia dolorosa" sufficient to be able to walk about. Professor Osler describes the case of a woman, aged 30 years, who began to have pains in the back and chest in August, 1899, 18 months after removal of the left breast for cancer. Shingles over the left side and shoulder appeared. She had a winter of great suffering. In March, 1900, she complained of difficulty in walking. Complete paraplegia, sensory and motor, followed. In July she began to improve. The paraplegia gradually disappeared and though stiff she could walk with a cane. Professor Osler gives no explanation of this curious recovery. Probably it was due to absorption of the secondary growth—an event which occasionally occurs in malignant disease.

DYING DECLARATIONS.

A MEDICAL practitioner was arraigned at the recent sessions of the Central Criminal Court upon a charge of murder of a woman, and was also indicted for using an instrument upon her with intent to procure her miscarriage. The case did not proceed far because the principal evidence tendered by the prosecution consisted in a dying declaration made by the deceased woman. The circumstances in which the declaration was made were proved, and Mr. Justice Bruce ruled it to be inadmissible as evidence. The declaration had not been made in the settled hopeless expectation of immediate or almost immediate death, which condition the law imposes in its anxiety that the prisoner in such serious cases may not be judged upon anything that may possibly have been said in malice and untruly. The dying declaration, which is used, when properly made, in cases where the death of the deceased forms the subject of the inquiry, must not be confused with the "deposition" of a sick or deceased person which may be read at the trial of any accused person, if it was taken in his presence before a magistrate and with opportunity afforded to him of cross-examining or protesting. In the case in question the declaration was further inadmissible because it was made in answer to questions and not as a voluntary unprompted statement and because a record had been made of the replies but not of the questions asked. We note these points because declarations of this kind are frequently made at the suggestion of the medical practitioner when he sees that there is no hope of his patient's recovery and when he suspects that there has been foul play. A declaration thus made is not more admissible because it was taken before a magistrate, although no doubt the presence of a justice of the peace may add authenticity and weight; the deposition, on the other hand, is taken with proper formalities by a magistrate. We observe that in the particular case there would have been a direct conflict of medical evidence as to the cause of death, had the trial proceeded, and that the accused had consistently denied that he did anything to procure a miscarriage. It may have struck some as strange that with this conflict of evidence the grand jury should have returned a true bill. It must be remembered, however, with regard to this that just as it is the duty of the magistrate to commit for trial so it is the duty of the grand jury to bring in a bill where they are satisfied that there is a *primâ facie* case against the prisoner. The admissibility of the dying declaration was for the

judge and he only decided the point after the bill was found, while it was not at all necessary that all the evidence for the prosecution, some of it inconsistent perhaps with other portions, should have been before the grand jury at all. That body, as soon as it is satisfied that there is a *primâ facie* case on evidence that has been laid before it, may find a bill without waiting to listen to any more.

THE BRAINS OF TWO DISTINGUISHED PHYSICIANS.

THE study of the brains of distinguished men is always fraught with interest because of the possibility of correlating exceptional endowments with special conditions of cerebral organisation and development. Up to the present day but few brains of really eminent men have been studied and described, the few including those of Chauncey Wright, Grote, Gauss, Gambetta, Helmholtz, and a few others. In the *Philadelphia Medical Journal* of April 6th Dr. E. A. Spitzka gives a description of the brains of two distinguished physicians—father and son. The elder, Dr. Edouard Seguin, was born in France in 1812 of a family which had distinguished itself for generations in medicine and the fine arts. Seguin became a physician and associated himself with Esquirol in the great work of the humane treatment of lunatics which the latter was then carrying on, devoting himself specially to the care and treatment of idiocy and imbecility. For over 40 years he was physician at the Hospice de Bicêtre and published works which immediately assumed a classical importance in regard to the subject of the education and treatment of the feeble-minded and the imbecile. He died in October, 1880. His son, Professor Edward Constant Seguin, was born in 1843, and after pursuing his medical studies in New York was appointed lecturer on diseases of the nervous system and insanity at the College of Physicians and Surgeons, New York, in 1871. He made valuable and original contributions to the pathology and therapeutics of nervous disorders and was one of the pioneers of American neurology. He died in February, 1898. The brain of the elder Seguin, says Dr. Spitzka, was normal in appearance and texture and weighed 1257 grammes, the weight being slightly below the average, a condition which Dr. Spitzka thinks may have been due to "some wasting of the brain-tissue from disease or age, or both." Its characteristic features are summed up as follows: (1) marked development with great breadth and fulness of the frontal lobes; (2) a great width and ample development of the parietal and temporal lobes; (3) relative smallness of the cuneus on both sides, especially the left; (4) general tortuosity of the fissures and gyri; (5) an exceptionally full development of the insula, and especially of its anterior part, so that on one side (the left) this part of the insula was not covered by the operculum but remained exposed; and (6) the frontal gyri were the most complex of the entire brain, being particularly rich in their windings. The speech-centre of Broca was also very well developed. "There is that in the 'physiognomy' of the brain, as in the son's," says Dr. Spitzka, "which it would be impossible to describe otherwise ..... than to say that it portrays the culture, refinement, and intellectual capacity of its erstwhile owner when living." The brain of the younger Seguin weighed 1502 grammes, the right hemisphere being 642 grammes and the left 653. As in the father's brain there was a slight but unquestionable exposure of the anterior part of the left insula. There was ample development of the frontal lobes and relatively small development of the occipital lobes. Hitherto an uncovered insula has only been found in the brains of imbeciles and mentally defective persons and in negroes, this condition being associated with insufficient development of the opercula. In the case of the Seguins, however, the explanation is different. The opercular regions are by no means defective in development, but are well developed. The insula, however, has been the seat of exceptionally marked development so that it has "virtually thrust apart the opercula and made itself visible." This view of the relative hypertrophy of the insula is supported by an elaborate series of measurements made of the fissures in and around it. Dr. Spitzka wishes to correlate this with the exceptional linguistic capacity of the Seguins, both father and son being fluent speakers and writers of three languages—English, French, and German.

SIMULATION OF BERI-BERI.

A CORRESPONDENT informs us that in the Malay Archipelago there exists a practice of malingering by shamming beri-beri which it is almost impossible to diagnose from the real case. It occurs mostly in the prisons amongst the long-sentence men who are liberated upon showing symptoms of beri-beri and are sent to their native home to die there. No sooner have they arrived there, however, than they are cured. Œdema is produced in a very simple manner. A fine hole is drilled into the leg and a small hair is inserted. After the skin has grown over the aperture thus made swelling sets in which pits exactly like the œdema in the real cases. Great lassitude and feebleness follow. The Government is only too glad to save the patient's keep and he is sent off home where he soon recovers after he has removed the hair from his leg. Medical officers belonging to the services might find it useful to keep this in mind when visiting these countries for the first time.

ASTEREOGNOSIS.

DR. CHARLES W. BURR, neurologist to the Philadelphia Hospital, reports in the March number of the *American Journal of the Medical Sciences* a number of cases which throw light on the interesting clinical condition known as stereognosis to which reference had previously been made in these columns.[1] Stereognosis is the capacity of recognising the nature of objects by handling them with the fingers; it is thus a complex perception dependent on the proper coöperation of cutaneous sensations (tactile and pressure sensations) and of the kinæsthetic sense (sense of spatial disposition of the fingers), and to a less extent of temperature and pain sense. According to Dr. Joseph Sailer[2] the cerebral centre concerned in the function of stereognosis is situated in the parietal lobe of the brain. The cases reported by Dr. Burr are as follows. Case 1.—A young man who when a boy sustained a fracture of the right parietal bone suffered from temporary hemiplegia and hemianæsthesia of the left side. On recovery he found that he could not recognise objects with his left hand. "On examination years after the injury it was found that though there was no palsy and no anæsthesia, save the inability to localise sensations, he could not recognise any object in the left hand. ..... The explanation was that being unable to localise sensations he could not distinguish form." Case 2.—A man, aged 37 years, had suffered for some weeks from "thickness" of speech and a little weakness and stiffness of the left side of the face. He then had an attack of illness of an obscure kind attended with unconsciousness, after which he exhibited a slight left-sided hemiplegia. Movements of the left arm were weakened. There was a slight impairment of tactile sensibility in the left thumb and index finger, and he localised light touch incorrectly but pressure correctly. In the left hand there was complete astereognosis.

[1] THE LANCET, April 15th, 1899, p. 1044.
[2] THE LANCET, 1899, loc. cit.

At his death, a few months later, a tumour was found in the right centrum semi-ovale above the lateral ventricle. Cases 3 and 4 occurred in a man and a woman respectively, the diagnosis in the latter being difficult owing to complications of the nature of hysteria. The man, aged 52 years, had astereognosis, and after death a tumour was discovered in the parietal lobe on the left side of the brain. It pressed against, but did not invade, the ascending parietal convolution, partially destroyed the angular gyrus, and involved almost the entire posterior parietal lobule. The subcortical white matter was destroyed by it. Its growth was marked by successive stages of clinical symptoms of a most interesting character, commencing with slight hemiplegia, slight tactile anæsthesia, and astereognosis. This showed that it involved the parietal lobe. Later, as the tumour increased, there followed symptoms of word-blindness (involvement of the angular gyrus) and of amnesic aphasia in varying degrees. The final stages were mental dulness and death. The lesion in this case was adequate to explain both the astereognosis and the word-blindness which were present and to prove the close proximity to each other of the cerebral centres which subserved these functions.

"LEGISLATION ON PENNY ICES: A GOOD EXAMPLE."

WITH reference to an annotation under this title which appeared in THE LANCET of May 18th, p. 1417, a correspondent tells us that the clause in the Brighton Corporation Bill relating to ice-cream did not pass through the Parliamentary Committee in the form in which it was originally drafted. The Bill contained two clauses, the first inflicting a maximum penalty of 40*s.* on any person causing ice-cream or similar commodities to be manufactured, sold, or stored in any improper place, or exposing such commodity to infection or contamination, or failing to notify any outbreak of infectious disease amongst the persons employed in the business. The second clause followed on the lines of Section 6 of the Order of 1885 relating to Dairies and Milk-shops, requiring, as in the case of milk, the registration of each person carrying on the trade of dealer in ice-cream and inflicting a penalty on any person selling such commodity within the borough while unregistered. Objection was taken to the latter clause in the preliminary stages of the Bill and the corporation were advised to withdraw it, and they did so. This, we think, is unfortunate, as the first clause without the second will only be partially operative, the main difficulty in connexion with the business of street-vending of ice-cream being to find the home address and to keep under frequent observation the condition of the house in which the ice-cream is manufactured.

A FRENCH SURGEON-MAJOR'S EXPERIENCE OF BRITISH HOSPITAL SHIPS.

SOME notes from an official report by Surgeon-Major Ropert, of the French frigate *Melpomène*, have recently been published with reference to British sick-transport from the Cape of Good Hope. His ship having put in at Las Palmas Surgeon-Major Ropert had an opportunity of inspecting the *Orotava*, which was conveying invalids to England. He expected to find "complex installations," but on the contrary everything was "very good but very simple." All the first-class cabins having been dismantled, large, well-ventilated, and sufficiently lighted wards were obtained, affording ample cubic space for the soldier-patients who occupied frame beds made of canvas which were suspended from the ceiling. These cots were all on the same plane, and the space between them was more than wide enough for the attendants. The *Orotava* was used for sick-transport only, but the *Lismore Castle*, which was also inspected, had been converted into a hospital ship. Having been sent out to Durban as a transport, her captain received orders at that port to fit his vessel out for the accommodation of sick and wounded men, and six days afterwards he was able to embark the patients. During upwards of four months the vessel had served admirably as a floating hospital, and she was now *en route* for England with every berth occupied. The installation, "as simple as practical," is briefly described by Dr. Cassien, who was one of Surgeon-Major Ropert's subalterns. It was apparently quite perfect, comprising luxurious quarters for 162 incapacitated soldiers, sick, wounded, and convalescent, besides a number of beds for non-commissioned officers in the side cabins, and for officers in the smoking-saloon and elsewhere on the upper deck. In close proximity to every ward there were baths, water-closets, and ice-chambers. The operating-room on deck was constructed of planking lined with tarred canvas and covered by a double roof. It contained a receptacle for instruments, another for dressing material, a large washing-stand with an electrically heated boiler, and several moveable incandescent lamps. "This simple little room, small and so easily disinfected, seemed to us," says Dr. Cassien, "to fulfil all the conditions requisite for the successful issue of the operations which, to the number of eight per week, had to be performed during the voyage." The solitary blot mentioned by Dr. Cassien is in connexion with the x ray installation. The radiographs produced were of little practical utility, although doubtless, he adds, "their moral effect on some of the wounded may have been advantageous." The professional service on the *Lismore Castle* was performed by five surgeons who had been engaged for the voyage, as well as by the medical officer of the ship. Five nurses "belonging to honourable Cape families" are described as volunteers, although they received pay at the rate of £100 a year with an additional allowance of one and a half francs to cover their daily expenses; 30 male attendants and two compounders completed the medical establishment. The lifts provided at each of the hatchways, which were capable of raising or lowering a patient while lying at full length in his cot, excited the admiration of Dr. Cassien, who was also favourably impressed by the way the gradient of the companion ladders had been adjusted to meet the requirements of the invalids. "A *monte-charge* (lift)," he says in conclusion, "is an installation which seems to me to be worthy of retention. It is not a fixture and can be readily installed when required."

THE EFFECT OF INTERCURRENT DISEASES ON EPILEPSY.

DR. JULES VOISIN of the Salpêtrière, Paris, contributes to the *Semaine Médicale* of March 20th a valuable article based on a large number of observations as regards the effects of intercurrent diseases on the course and prognosis of epilepsy. The following are the chief conclusions obtained as regards the epileptic attacks. 1. The epileptic seizures are lessened in frequency or restrained by an intercurrent attack of erysipelas during the acute stage of the latter, but the fits return during the stage of convalescence. This was noticed in several cases. 2. In one case of anthrax the epileptic fits were absent during the suppurative stage, but the patient died from acute septicæmia. 3. In epileptic patients who have contracted phthisis the fits subside when the tuberculous process is most acute and reappear when the phthisis is ameliorated. This was noted in many cases. 4. In a few cases of diphtheria supervening in the course of epilepsy the fits were absent during the illness but returned during convalescence. 5. In small-pox and in rheumatic fever epileptic fits are diminished during the acute stage only. 6. Epileptic attacks are rendered worse

and more dangerous in scarlet fever. Four epileptics contracted scarlet fever and all died on the fourth or fifth day of illness, whereas 15 other patients in Voisin's Clinic who contracted scarlet fever and who were non-epileptic all recovered uneventfully. 7. Influenza greatly increases the number of epileptic attacks, and its pulmonary complications exert a dangerous effect on epileptics. Influenza tends to produce the status epilepticus. Thus one patient so affected had 175 fits in five days and another had the extraordinary number of 214 fits in one day. This deleterious result has also been fully shown in a recent *thèse* by Dr. Lannois of Lyons.

THE EARLY DAYS OF "THE LANCET": A BROKEN LINK.

THE death in his ninety-third year is announced as having taken place at Godalming on May 10th of Mr. Alexander Dickson Mills. His name will probably recall to those who have read the "Life and Times of Thomas Wakley" the very early days of THE LANCET'S existence. Thomas Wakley's biographer writes on page 228, &c.: "A few words should be said of Wakley's staff during the first 10 years of THE LANCET, for had he not been loyally supported by his assistants he never could have accomplished what he did during the period or have laid the foundation for his great success in the future. From the beginning he was helped by Cobbett and Wardrop, but on the paper being transferred to the offices of Messrs. Mills, Jowett, and Mills he was introduced to a family with whom he was to remain for many years in close contact, and whose assistance to THE LANCET can be over-estimated with difficulty. Mr. Mills, senior, had four sons—Samuel, George Ireland, James Basnett, and Alexander Dickson. Samuel was in his father's firm and became the head-printer to THE LANCET, while the three younger sons joined the staff in different capacities. George Ireland Mills succeeded to much of Lambert's editorial work when that gentleman retired from the staff after the Bransby Cooper case. He later became Wakley's private secretary, and was for some time his deputy-coroner. James Basnett Mills was a very fine young scholar. He frequently acted as Wakley's amanuensis. He eventually took orders, and was classical coach to no less a person than Benjamin Jowett, the famous Master of Balliol, who was a son of the partner in the firm of Mills, Jowett, and Mills, while his next pupil was Wakley's eldest son. Alexander was a proof-reader in the establishment when the printing of THE LANCET was removed to Bolt-court. He was the first sub-editor of the paper, and combined the duties with those of publisher. Alexander Mills's room formed the business office of THE LANCET, and here the meetings of the staff took place on Friday nights." The task of obtaining materials for the biography was very materially assisted by Mr. Alexander Dickson Mills, who most kindly lent to us a great many old papers and letters which we could not otherwise have obtained, notably the letter from the founder of THE LANCET to Douglas Jerrold which is printed on p. 493 of the book. Mr. Mills until quite recently, at all events, despite his great age, was vigorous and hearty.

THE X RAYS IN THE DIAGNOSIS OF THORACIC ANEURYSM.

IN the *Edinburgh Medical Journal* for April Dr. Hugh Walsham shows the great value of skiagraphy in the diagnosis of thoracic aneurysm. In all doubtful cases of chest disease a skiagram, he thinks, should be taken. Dr. Walsham uses a coil giving a 12-inch spark. The secondary coil has some 15 miles of wire wound in 70 sections and is worked by 24-cell accumulators of 21 ampère-hours' capacity and an electro-motive force of 16 volts. The time of exposure depends a good deal on the patient. For obvious reasons fat and muscular persons require a longer exposure than thin ones; adults and males require a longer exposure than children and females. For thin patients about one minute 50 seconds is sufficient, for very muscular patients three or four minutes may be required. A knowledge of the normal shadows of the heart and aorta is necessary before skiagrams can be interpreted. Normally the shadows of the heart and aorta are well seen, and that of the aorta can be traced up nearly to the manubrium sterni. Dr. Walsham relates the following cases in which thoracic aneurysm was first discovered by skiagraphy. Case 1.—A man, aged 45 years, had been treated by three physicians for intercostal neuralgia. The upper dorsal vertebræ were tender on percussion. There were no dulness, tracheal tugging, inequality of pupils, or cough, and there was only slight dyspnœa. Radioscopy showed a large aneurysm of the thoracic aorta. Case 2.—A woman, aged 51 years, was admitted to hospital in 1897 with signs of aortic regurgitation and was discharged considerably improved. She returned in 1900 in much the same condition, but pain in the back from which she had previously suffered was much worse. Radioscopy showed an aneurysm of the descending aorta. Case 3.—A woman, aged 58 years, was sent to hospital with the diagnosis of laryngeal phthisis. Laryngoscopic examination showed paralysis of the left vocal cord, but this was the only sign of aneurysm. Radioscopy showed a large aneurysm of the transverse arch of the aorta. Case 4.—A man, aged 37 years, was admitted to hospital and intra-thoracic tumour was diagnosed. A skiagram showed a large aneurysm of the aorta. As an aid in prognosis skiagraphy is also useful. Fluid blood is almost completely transparent to the x rays; clotted blood is comparatively opaque. The greater the opacity of the aneurysm the more abundant, therefore, is the laminated clot contained in it.

THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

PHARMACISTS have many topics to discuss just now, and at the annual dinner of the members of the Pharmaceutical Society held on May 21st at the Hôtel Métropole some important expressions of opinion were made in regard to the position of pharmacy and the pharmacist. In speaking to the toast of the evening—viz., "The Pharmaceutical Society of Great Britain"—Sir James Crichton Browne, F.R.S., Vice-President of the Royal Institution, said that the work of the pharmacist was to perfect, to improve, and to disseminate means of alleviating suffering and prolonging life. This work was hampered by ignorance and prejudice which must be overcome by education. The work of improving the education of chemists and druggists and of maintaining discipline among them was one which was an advantage to the whole community and therefore deserved public support. It had been whispered that the days of medical men and druggists were numbered and that faith-healing was to reign supreme. Though faith-healing had been taken up by a certain number of persons of ill-balanced minds it was the most blatant and hideous infidelity, ostensibly founded on certain texts but totally ignoring the revelation of the book of nature which was constantly being unfolded by science and teaching the sources of human ills and their appropriate antidotes. He believed and knew that notwithstanding the success of the Pharmaceutical Society some of its members had a hard struggle, and he considered that they should be protected as far as possible from all undue competition. He therefore ventured to suggest that at some convenient time the

Pharmaceutical Society should direct its attention to the sale of drugs in hospitals to out-patients. He was not desiring to limit the free supply of medicine to the poor, but there was no justification for using charitable funds to take the bread out of the mouth of the poor pharmacist, because if an out-patient could afford to pay for medicine the pharmacist was the proper person to receive the money. Many an out-patient would be the better for some good port wine but he had not heard that any hospital had yet opened a bar or applied for a licence to sell liquor on their premises. The toast of "The Medical Profession" was entrusted to the care of the treasurer of the society, Mr. S. R. Atkins, who said that the society had always tried to inculcate in its members a very high line of conduct. He thought that all would agree that medicine was the only profession apart from the Church which was truly altruistic. Dr. D. MacAlister, chairman of the Pharmacopœia Committee of the General Medical Council, in acknowledging the toast said that he had been for many years endeavouring to bring the British Pharmacopœia, which was their common sacred book, into a condition nearer perfection than it had been before. The work was now before the world and he was gratified to find that it had not been unsuccessful and any success which had been gained was due to the fact that the General Medical Council had been in very close relation with the Pharmaceutical Society in the preparation of the volume. Mr. W. Palmer, M.P., in responding to the toast of "The Houses of Parliament," said that he hoped to be able to promote the interests of the society in connexion with any legislation which might come before Parliament. The banquet was very largely attended, over 200 guests being present, amongst them being Sir Frederick Abel, Bart., F.R.S., director of the Imperial Institute; Mr. A. Curtis Cope, of the Royal College of Veterinary Surgeons; Professor J. M. Thomson, F.R.S., of the Institute of Chemistry; Professor W. A. Tilden, F.R.S., and Professor N. Collie, F.R.S.

A JUDGE AND JURY ON INFANT INSURANCE.

THE connexion between infant mortality and insurance has been often observed, and under such conditions as to suggest, at times very strongly, that there frequently exists between them a relation which is practically that of cause and effect. This was the view taken by a jury which recently returned a verdict of manslaughter against a woman at Darwen. They used the opportunity to express their condemnation of the way in which insurance companies paid premiums on the deaths of children over the age of six months. The presiding judge, Mr. Justice Darling, referred to this practice as one which simply offered a premium to parents to neglect their children or to ensure that they should die at six months. It is refreshing to find a judge and jury express themselves with so much candour and directness, and we believe that no disinterested and honest thinker who has really given his attention to this subject will be disposed to dissent from these views. We confess that we have never been able to see the necessity for this system of insurance in our social organisation. The burial of an infant is very far from being a costly matter. It ought to be quite within the scope of thrifty management on the part of even poor parents. It is notorious, moreover, that the sums insured for are often far beyond those required for mere funeral expenses. Equally certain is it that the insurance premiums would in very many, probably in most, cases be allowed to lapse if it were not for the solicitous energy of the agents who collect these subscriptions for the companies they represent. The whole arrangement wears to our mind the aspect of a business venture, not too nice as to its methods. We are thankful, therefore, to a judge and jury who have spoken their minds, and we sincerely hope that a Government which has the country at its back will take up this question in a similar spirit. One consequence of such action will be a diminution in the present rate of infant mortality.

PLAGUE AT THE CAPE OF GOOD HOPE.

A TELEGRAM received at the Colonial Office on May 17th gives the following statistics of plague for the week ending May 11th:—Europeans, eight cases and two deaths; coloured persons, 24 cases and 19 deaths; Malays, five cases and four deaths; East Indians, no cases or deaths; Chinese, no cases or deaths; natives, one case, no death. Total for the week, 38 cases, 25 deaths. The total cases and deaths up to May 11th are as follows:—Europeans, 155 cases and 50 deaths; coloured persons, 280 cases and 138 deaths; Malays, 39 cases and 30 deaths; East Indians, five cases and five deaths; Chinese, one case and no death; natives, 130 cases and 52 deaths. Total up to May 11th, 610 cases and 275 deaths. Four cases have been notified at Port Elizabeth.

THE ROYAL UNIVERSITY OF IRELAND.

SOME amusement has been caused in the medical profession in Ireland by certain proceedings at the Senate of the Royal University on May 3rd, the nature of which has transpired sufficiently to allow a judgment to be formed. The facts are simply as follows. The question of the desirability of appointing extern examiners as in other universities has been before the Senate for about two years. A strong committee reported on the question and the Senate at a large meeting in February adopted the report recommending the appointment of extern examiners in surgery, midwifery, pathology, and ophthalmology; yet it is common knowledge that at a small meeting of the Senate on May 3rd (without any previous notice on the agenda paper) it was agreed in substance that no further steps should be taken as to the appointment of extern examiners till Dr. W. A. McKeown and Professor T. Sinclair, who had moved in the matter, should define what was meant by the term "extern." The Senate were led in this matter, which seemed to be a purely medical one, by the opinion of the medical members who chanced to be present. The action of the Senate means that the Belfast medical representatives are to travel to Dublin to define the meaning of a word in common use in universities. The question of extern examiners is not merely a medical one; it is a general one. The failings of county councils and of boards of guardians in the conduct of business might be passed over, but that the senate of a university should have discussed for two years the appointment of "extern" examiners, and after having agreed to make such appointments should admit that they do not know what they have been talking about, is to the ordinary mind incomprehensible, especially when every one of them is supposed to be intimately acquainted with university terms and practices. To anyone who knows the medical schools of Ireland and the peculiar constitution of the medical examining boards of the Royal University as well as the extent to which some medical examiners have been in the habit of asking questions to which sufficient answers can only be given by students who have been taught by themselves, the meaning of the word "extern" can hardly be misunderstood. It means, in fact, that any person connected with any university, college, or hospital in Ireland should not be eligible. It is further felt that, in the public interest, extern examiners should be appointed for the medical examinations in Trinity College, Dublin, the Royal College of Surgeons in Ireland, and the Royal College of Physicians of Ireland. The standard of the Royal University of Ireland is high,

but that of the institutions named is not always satisfactory. Only in this way can the malign influence of examining after merely local traditions, ideas, and practices, too common in Ireland, be effectually and for ever killed.

THE CARE OF NEGLECTED CHILDREN IN THE UNITED STATES.

AN interesting report has been issued recently by the Children's Aid Society of Philadelphia which completes the nineteenth year of its existence as a philanthropic institution. The work of the society includes the care and bringing up of foundlings and "neglected children." The report shows that at the beginning of the year 1900 803 children were under care, and that 140 fresh cases were received during the course of the year. The children were taken from various classes and strata of society and included the following: orphans, 33; half-orphans, 67; deserted children, 39; children of dissolute parents, 63; children of unmarried parents, 43; children of invalid or insane parents, 26; children rescued from ill-treatment, 88; children of parents living but separated, 93; children of parents who could not control them, 42; vagrants, 10; children received from criminal courts by magisterial orders, 56; children from almshouses, 335; and children from other charitable societies, 18. Depravity and immorality, often combined with disease and dirt, were generally found to be among the circumstances in which most of the children began life, and the report states that taking the little ones from their noxious surroundings, housing them with kindly foster-parents, and educating them in order to enable them to earn a living constituted the only means of saving many from the prison or workhouse—a service which, unobtrusively pursued, was of inestimable value to the community. The success achieved by the Philadelphia Children's Aid Society must be regarded as worthy not only of praise but of emulation.

PROSPECTS IN GENITO-URINARY SURGERY.

IN an address on this subject delivered at Cornell University, U.S.A., Mr. Reginald Harrison touched many points of great interest. Allusion to the great advance made by Bigelow in the discovery of the operation of litholapaxy, which was no doubt influenced by the investigations of another American surgeon (Otis) into the size of the male urethra, formed an appropriate introduction to his lecture. Bigelow's operation has one disadvantage—it is liable to be followed by recurrence of stone. This leads to the question of calculus formation, a subject first investigated by Rainey of St. Thomas's Hospital, who as far back as 1857 demonstrated a method of making calculi artificially by what he described as "molecular coalescence." The more recent work of Dr. Vandyke Carter and Dr. W. M. Ord has confirmed and extended his views. From these investigations Mr. Harrison concludes that for the artificial production of calculi by molecular coalescence precision in regard to details is necessary. The repetition of Rainey's experiments and their development with a view to discovering methods of preventing the formation of calculi and of cure in cases in which they have formed constitute, as Mr. Harrison suggests, work which might well engage the attention of laboratory workers. Turning to the subject of "enlarged prostate" he pointed out that from the therapeutic standpoint this term is beginning to be recognised as too vague. When micturition is seriously interfered with and the condition is unmanageable by the catheter the precise nature, shape, and relations of the prostate can now be determined by the cystoscope preliminarily to surgical treatment—a procedure of great advantage. For example, in a case of rapidly recurring stone in the bladder it was found by cystoscopic examination, before repeating Bigelow's operation for the third time within two months, that a pedunculated process of prostatic tissue, just to be detected by rectal examination, had converted practically the lower and posterior segment of the bladder into a box with a moveable lid formed by the prostate. This by confining a certain quantity of urine brought about its decomposition and led to the formation of a phosphatic stone. Thus the calculus was simply a natural result of the condition of the parts. Mr. Harrison practised the median perineal *boutonnière* operation and twisted off the narrow-necked growth. There are three varieties of enlarged prostate which require different treatment. General hypertrophy, usually associated with congestion, gives good results when treated by vasectomy, castration, and possibly by Bottini's operation. A pendulous prostatic growth is not suited to any of these operations but is best treated in the manner just described. Obstruction depending on the presence of an interstitial adenoma has been most successfully dealt with by enucleation through a suprapubic incision.

RETIREMENT OF THE DIRECTOR-GENERAL, A.M.S.

WE understand that Surgeon-General J. Jameson, C.B., Director-General of the Army Medical Service, is retiring on June 1st next with the maximum pension. The occasion will, we hope, afford a fitting opportunity for giving to the retiring officer the titular distinction which was anticipated for him in the recent Gazette.

WE have reason to hope that the report of the Commission of Inquiry into the management of the National Hospital for the Paralysed and Epileptic, Queen-square, will be found very satisfactory for the cause of representation of the medical staff on the board. The Commission closed its sitting last week and the report will soon be published.

THE forty-first annual dinner of King's College, London, will be held at the Trocadéro Restaurant, on Monday, June 24th, the Hon. Mr. Justice Byrne in the chair. Communications should be made to Mr. John Chapman, honorary secretary of the committee.

To the names of medical candidates for the coronership of the City of London there should be added that of Mr. G. Russell Beardmore, who is also a barrister-at-law.

MEDICAL MEN AND THE WORKMEN'S COMPENSATION ACTS.

II.[1]

As we pointed out in our first article the medical practitioner has duties imposed upon him by the Workmen's Compensation Act of 1897 beyond those which consist in attending or examining a man injured in an accident, and giving evidence either on his behalf or that of his employer at the trial of an action for compensation. These duties are defined, not in the Act, which is a short one, but in the schedules and regulations appended to it. In the Act itself we see nothing, beyond what we have already mentioned, that concerns medical men even indirectly, except possibly the proviso that before proceedings are taken under the Act notice must be given to the employer of the accident, and that this notice must be given "as soon as practicable after the happening" of the accident, or in any case within six months of the happening

[1] Part I. appeared in THE LANCET of May 18th, 1901, p. 1420.

of it, or, where death has resulted, within six months of the death. Sometimes, perhaps, the question whether it was practicable for this notice to be given earlier may call for medical evidence. The notice, however, need not necessarily be given by the victim of the accident himself if he be alive, but is naturally given in many cases by his friends. It must, besides giving the injured man's name and address, "state in ordinary language the cause of the injury and the date at which it was sustained." It should evidently be in writing, although nothing is said expressly on this point, and it will be noted that no mention is made of any statement in it as to the nature and extent of the injuries sustained. The next step prescribed arises under the third section of the first schedule, which runs as follows:—

Schedule I. (3).—Where a workman has given notice of an accident he shall, if so required by the employer, submit himself for examination by a duly qualified medical practitioner provided and paid by the employer, and if he refuses to submit himself to such examination, or in any way obstructs the same, his right to compensation and any proceeding under this Act in relation to compensation shall be suspended until such examination takes place.

It will be observed that this examination must be by a duly qualified practitioner, which means one duly registered, and the nature of the examination and of the evidence that will have to follow it will be gathered from what follows as to the scale of compensation. It is not necessarily a final examination, in that there may be subsequent examinations, to which we shall refer, which may corroborate or correct the conclusion arrived at. It will be noted that the medical practitioner employed under this section is to be "provided and paid by the employer." In cases in which payment is not made before the examination takes place it is advisable for the medical man who wishes to prevent subsequent disputes to be sure that the employer has "provided" him and is aware of his liability towards him.

The amount of compensation may be agreed between the employer and the workman or his representatives. Subject to such agreement it is to be settled by arbitration, the county-court judge being the usual arbitrator. It may be mentioned, in passing, that the county-court judge and the arbitrator appointed by him have power to compel the attendance of witnesses and the production of documents as if the matter were an action in the county court. With the assessment of compensation where death has occurred the medical practitioner, as a rule, has little to do and his evidence will be confined to the fact of death and its cause. In the case, however, of a deceased person who has left no dependents the reasonable expenses of his medical attendance and burial, not exceeding £10, can be recovered as compensation under Schedule I. (1. A. iii.). On this contingency occurring the legal personal representative of the deceased person is the proper person to apply for the settlement of the claim by arbitration and if there be no such representative then any person to whom such expenses are due should apply. Such applicant must join as applicant or respondent any other persons to whom he knows such expenses are due. If the amount awarded is not sufficient to pay all claims in full the amount awarded will be apportioned by the judge or arbitrator (see Workmen's Compensation Rules, 6). In the case where an injured workman is entitled to compensation for injuries which have not proved fatal the details of the method by which the payments ordered to be made to him are calculated do not concern the medical practitioner. It is enough for him to know that the compensation is based upon weekly earnings and is to compensate for weekly earnings lost during the period of incapacity which follows the first two weeks of such incapacity. For the first two weeks after the accident the Act does not compensate the injured man, and the compensation takes no account of pain and suffering such as are reckoned in assessing damages at common law or under the Employers' Liability Act, nor does it include expenses of medical attendance. We have seen the extent to which these last are provided for in the case of death. The compensation when fixed is paid weekly and the 11th section of Schedule I. provides as follows:—

Schedule I. (11).—Any workman receiving weekly payments under this Act shall, if so required by the employer, or by any person by whom the employer is entitled under this Act to be indemnified, from time to time submit himself for examination by a duly qualified medical practitioner provided and paid by the employer or such other person; but if the workman objects to an examination by that medical practitioner, or is dissatisfied by the certificate of such practitioner upon his condition when communicated to him, he may submit himself for examination to one of the medical practitioners appointed for the purposes of this Act, as mentioned in the second schedule to this Act, and the certificate of that medical practitioner as to the condition of the workman at the time of the examination shall be given to the employer and workman and shall be conclusive evidence of that condition. If the workman refuses to submit himself to such examination or in any way obstructs the same his right to such weekly payments shall be suspended until such examination has taken place.

The rules which govern reference to medical referees prescribe that such references as they deal with shall be made through the county court only. The section above quoted is framed to provide for the workman going in the circumstances described direct to the referee. In such a case the referee will have to look to the workman for a reasonable fee and should receive it before making his examination (Home Office Memorandum, dated April 19th, 1898). It will be noted that this section provides against a man who has been awarded compensation malingering and exaggerating the duration of his incapacity for work and that it enables not only the employer to have the workman re-examined by a medical man, but also enables a person to do so by whom the employer is entitled to be indemnified—that is to say, in most cases, the insurance company with whom the employer has insured against this class of risk, or in other cases a stranger who has by his negligence contributed towards the accident.

The twelfth section of Schedule I. provides that:—

Any weekly payment may be reviewed at the request either of the employer or of the workman, and on such review may be ended, diminished, or increased subject to the maximum above provided, and the amount of payment shall in default of agreement be settled by arbitration under this Act.

With regard to this we need hardly point out that the discontinuance, increase, or diminution of the weekly payments must depend chiefly upon what the medical practitioner has to say with regard to the workman's capacity for labour, and that the last word as to this will rest with the medical referee where there is a difference of opinion on the part of those who give evidence on his behalf or that of his employer. The employer only, and not the persons who indemnify him, is entitled, apparently, to the benefit of this last-quoted section.

ASYLUM REPORTS.

City of London Asylum, Stone, near Dartford (Annual Report for 1900).—The average number of patients resident during the year was 498 and comprised 244 males and 254 females, showing an increase of 13 as compared with 1899. During the year 184 patients were admitted, of whom 108 were males and 76 were females. Dr. Ernest W. White, the medical superintendent, states in his report that "this is the largest number of admissions in one year since the opening of the asylum." Seven of the males and 10 females were readmissions. As regards bodily health 43 males and 30 females were weak, while four males and seven females were in bad health. Regarding the mental condition of the 184 patients admitted five males and two females were suffering from general paralysis of the insane, 27 males and 15 females from the more acute forms of mania, and 18 males and 19 females from acute melancholia. The admissions included 18 cases of chronic mental disease. As regards the causation of insanity in the admissions, heredity, intemperance, and previous attacks were the chief factors, after which followed such conditions as old age, worry and anxiety, and bodily diseases. The number of patients discharged as recovered during the year was 74—viz., 49 males and 25 females, or 14·8 per cent. of the average number resident. The recovery-rate has been reduced somewhat by the chronic cases admitted as mentioned above. The deaths during the year amounted to 31, including 16 males and 15 females, or 6·2 per cent. of the average number resident. Of the 31 deaths four resulted from general paralysis of the insane, four from chronic Bright's disease, four from melancholia, three from mania, four from pulmonary tuberculosis, three from epilepsy, and three from senile decay. The casualties consisted of one case of dislocation of the shoulder by a fall, one of fracture of the left femur in a patient pushed down by another, one of fracture of the forearm by a fall, and one of a fractured rib caused by a blow from a patient. Four patients escaped but all were brought back to the asylum within 24 hours of escaping. Forty-eight paying patients are accommodated in the asylum, 23 being males and 25 females. The system of having paying patients continues to show success. The general health of the institution was good

Epidemics of influenza broke out in October and in January affecting both patients and staff. In January there were three cases of enteric fever and in May two cases, the patients in all of which cases recovered. Ulcerative colitis did not occur in a single case. The working of the farm for the year showed a net profit of £452 10s. The live stock were healthy during the year; 491 head of poultry were reared and over 27,000 fresh eggs were received from the farm during the year. The Lunacy Commissioners state in their report that the post-mortem records and case-books are intelligently kept.

Barnwood House Hospital for the Insane, near Gloucester (Annual Report for 1900).—The average number of patients resident during the year was 153, and comprised 63 males and 90 females. 27 patients were admitted during the year, this being the smallest number admitted in any year since 1891. The average admission-rate for the five years beginning 1895 was 34·6. Dr. J. G. Soutar, the medical superintendent, states in his report that many of the cases admitted were of an unpromising nature as far as recovery was concerned, 11 of the 27 being regarded as incurable. Two patients came to the hospital as voluntary boarders, but it was found necessary to place them under certificates. Applications have often been received for the admission of other voluntary boarders, comparatively few of whom, however, were regarded as suitable. These applicants were of two kinds, first, those whose mental ailments was so slight that, in the interest of the patients, it was necessary to advise that other methods of treatment should be followed "rather than that they should be subjected to the somewhat depressing circumstances and influences which, even with the strictest classification, are in some degree inevitable in an asylum"; secondly, those patients whose friends desired to place them in an asylum, but without certification, on the plea that the illness was "hysterical" or due to "eccentricity," whereas the true mental state was either that of mania or of delusional insanity. The alleged causes of insanity in those admitted were "as varied and as unsatisfactory as usual," but in 37 per cent. of the cases an hereditary tendency to mental disorder was ascertained to exist and in many of the "recent" cases there was marked failure of the general health. During the year nine patients—five males and four females—were discharged as recovered, or 5·8 per cent. of the average number resident. "This compares unfavourably with the recovery rate for 1899. ..... We have to go back to 1882 to find a year in which the percentage of recoveries on admissions was so low as it was in 1900." The explanation of this fact is that there have been very few cases of acute and curable insanity among the admissions. Two female patients were discharged to their homes as relieved, and 13 patients were discharged as not improved. The deaths during the year amounted to seven (four males and three females), or 4·57 per cent. of the average number resident. Of the deaths one each was due to phthisis, intestinal obstruction, and cardiac disease, and two each to pneumonia and general paralysis. The only casualty of a serious nature was a fracture of the thigh sustained by an old female patient from an accidental fall. There were no outbreaks of infectious diseases during the year and the general health of the patients and the staff was good. No structural alterations were made in the hospital during the year, but the usual attention was given to repairs, decorations, and furnishing. Of 10 male attendants one died, two were called up for service in South Africa, two were dismissed for breach of discipline, and five left by their own wish. Only four female attendants left during the year—three of these left to be married. The Lunacy Commissioners state in their report that the medical case-books were well and carefully kept. They were of opinion that a Turkish bath would prove a useful addition to the hospital.

PROVISIONAL RETURNS OF THE CENSUS OF 1901.

II.[1]

THE Registrar-General has recently issued a further instalment of the census returns, showing the enumerated populations of the several administrative counties of England and Wales. The figures for the metropolis and for the English and Welsh county boroughs have already been given in THE LANCET; we are, therefore, now able to show the totals for England and Wales. They are as follows:—

County of London	4,536 034
Other administrative counties	18,850,492
County boroughs	9,139,190
Total, England and Wales	32,525,716

In the appended table we have worked out the differences in the populations of the several counties at the last two censuses, but the figures must be taken as approximate only and as subject to revision after the enumeration books have been scrutinised at the Census Office. The results, however, as herewith presented are believed to be fairly reliable.

Since the census of 1891 the population of England and Wales in the aggregate has increased by 3,523,191, or 12·15 per cent., the percentage increase during the preceding intercensal period having been 11·65.

It will probably be some considerable time yet before we shall know the comparative rates of increase of "urban" and "rural" England respectively; but if we divide England and Wales into two sections, the one consisting of the 67 county boroughs (including London), and the other of the 62 administrative counties, the returns show that the former areas in the aggregate have increased faster than the latter by fully 1½ per cent. Of the 62 administrative counties of England and Wales 48 show an increase of population since the previous census, while 14 show a decrease. Of the latter Oxford, Devon, Norfolk, and West Suffolk are the counties the populations of which are apparently declining most rapidly. It is probable, however, that the more decidedly rural portions of certain other agricultural counties, such as Wilts, Bedford, Bucks, Somerset, and Dorset, would also show a decrease, perhaps even greater than either of the foregoing, if the numbers living in the urban parts of these counties could be counted separately and eliminated from the totals. This, however, cannot be done until the detailed returns of the urban and rural areas are available.

In our opinion there is no doubt that a real diminution of population in the purely agricultural districts of England and Wales is in progress, although the figures at present at our disposal do not enable a correct estimate to be formed as to its extent. It is in the north-western and northern counties and in the home counties of England that the growth of the population since 1891 has been the most rapid. Thus, the population of Essex has increased in round numbers by 238,000, that of Middlesex by 249,000, that of Kent by 129,000, and that of Surrey by 100,000. Taking these four counties together, the population has increased in the aggregate from 2,347,608 to 3,064,274, or by more than 717,000.

We have before expressed an opinion, which the results of the recent census confirm, that a period of more than five years should not be allowed to intervene between one census and another. But even with a quinquennial census it is evident from the metropolitan returns that estimates of the population for subsequent years are frequently unreliable. It is, however, obviously desirable, whether or not a census of England in 1906 is decided upon, that some method more efficient than that at present in use of estimating the population for intervening years should be adopted. It has before been suggested by competent authority that a true return of inhabited houses in towns of sufficient size would supply a satisfactory basis for such estimates. This plan has been tried in past years for a few of the larger English towns, but with only partial success, probably because of local difficulties which were not effectually dealt with at the time. We are, however, advised that a competent actuary would readily suggest a form of rate-book which would show with sufficient accuracy the number of houses actually occupied in a given town from year to year, and that such a return, whilst subserving the purposes of the local rating authorities, would furnish the means of arriving at a fairly reliable estimate of population. For it is well known that when the totals are sufficiently large the average number of persons per house is practically constant for the same town.

In the course of a few weeks we hope to receive the preliminary census report complete, which will furnish all the information derivable from the unrevised returns that are made by the local registrars throughout the country.

[1] The first instalment was noticed in THE LANCET of May 11th, 1901, p. 1357.

*Population Enumerated in 1891 and 1901 in the 62 Administrative Counties of England and Wales.**

Areas.	Population. 1891.	Population. 1901.	Difference in 1901.
England and Wales	29,002,525	32,525,716	3,523,191
62 administrative counties ...	20,935,597	23,386,526	2,450,929
67 county boroughs	8,066,928	9,139,190	1,072,262
ENGLAND.			
Administrative counties.			
Bedfordshire	161,378	171,699	+ 10,300
Berkshire...	176,119	180,366	+ 4,247
Buckinghamshire...	186,680	196,843	+ 10,163
Cambridgeshire	120,645	120,634	- 11
Isle of Ely	63,360	64,491	+ 1,154
Chester	535,944	601,042	+ 65,046
Cornwall	322,571	322,857	+ 286
Cumberland	266,549	266,904	+ 355
Derbyshire	425,472	504,577	+ 79,105
Devonshire	442,287	436,913	- 5,374
Dorsetshire	193,542	202,093	+ 8,551
Durham	730,793	843,310	+ 112,517
Essex...	578,471	816,524	+ 238,053
Gloucestershire	323,980	331,515	+ 7,535
Herefordshire...	115,702	114,160	- 1,612
Hertfordshire...	226,597	258,044	+ 31,457
Huntingdonshire	58,015	54,127	- 888
Kent	807,332	936,003	+ 128,675
Lancaster...	1,964,696	1,827,330	+ 262,634
Leicestershire...	201,639	225,895	+ 24,256
Lincolnshire—Holland	76,204	77,583	+ 1,379
,, Kesteven	105,351	103,967	- 1,404
,, Lindsey	199,051	206,497	+ 7,446
London	4,228,317	4,536,034	+ 307,717
Middlesex...	542,894	792,225	+ 249,331
Monmouthshire	203,426	230,792	+ 27,366
Norfolk	318,301	313,438	- 4,863
Northamptonshire	189,213	207,466	+ 18,248
Soke of Peterborough... ...	35,249	41,119	+ 5,870
Northumberland	319,730	387,728	+ 67,998
Nottinghamshire	231,745	274,683	+ 42,938
Oxfordshire	143,753	137,118	- 6,635
Rutlandshire	20,659	19,708	- 951
Shropshire	236,827	239,297	+ 2,470
Somersetshire...	378,106	385,059	+ 6,953
Southampton	534,194	577,121	+ 42,927
Isle of Wight	78,672	82,387	+ 3,715
Staffordshire	771,258	879,625	+ 108,367
Suffolk—Eastern	183,406	189,153	+ 5,748
,, —Western	121,350	117,535	- 3,815
Surrey	419,115	519,522	+ 100,407
Sussex—Eastern	227,699	261,691	+ 33,992
,, Western	140,987	151,540	+ 10,553
Warwickshire	301,412	347,993	+ 46,581
Westmorland	66,215	64,411	- 1,804
Wiltshire...	262,551	271,372	+ 8,821
Worcestershire	297,380	358,337	+ 60,958
Yorkshire—East Riding	141,180	145,877	+ 4,697
,, North Riding... ...	284,015	285,681	+ 1,666
,, West Riding	1,294,423	1,460,857	+ 166,434
WALES.			
Administrative counties.			
Anglesey	53,098	50,475	+ 377
Brecknockshire	51,393	54,211	+ 2818
Cardiganshire	63,467	61,068	- 2399
Carmarthenshire	130,566	135,320	+ 4754
Carnarvonshire	117,586	125,654	+ 8068
Denbighshire...	118,979	131,588	+ 12,609
Flintshire...	77,041	81,487	+ 4,446
Glamorganshire	467,964	601,080	+ 133,126
Merionethshire	48,859	48,786	- 73
Montgomeryshire...	58,003	54,892	- 3,111
Pembrokeshire	88,296	87,856	- 440
Radnorshire	21,791	23,263	+ 1,472

* The figures for 1901 are unrevised.

THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

THE festival dinner of the Medical Graduates' College and Polyclinic was held at the Hotel Cecil on Wednesday, May 22nd, when the Right Honourable A. J. Balfour, M.P., presided.

The loyal toasts, which were proposed by the chairman, having been duly honoured,

Mr. BALFOUR gave the toast of the evening. He said that he proposed the toast with deeper feelings of responsibility than usually oppressed a person in his position, because he knew that he was pleading a cause which had not behind it any great wave of popular feeling or emotion, a cause which did not readily or immediately appeal to the man in the street, and yet it was a cause in which the whole community were deeply and profoundly interested. It was a cause which touched every one of them as human beings and which affected not only their own happiness, their own lives, and the happiness and the lives of those nearest and dearest to them, but the future generation whom it was their business to aid. The "Polyclinic" was an institution which was in this country as yet young, though well known and fully recognised in almost every civilised country in the world. It was an institution with many sides of activity and utility. He would not attempt to dwell upon them all, but there were three which would specially appeal to his audience. The first sign of the activity of this institution might be perhaps described as strictly and directly philanthropic—that is to say, it brought directly home to those most in need of it and to those who could not otherwise afford it medical assistance, medical advice, and medical knowledge which would not under other circumstances be at their command. For the Polyclinic did something which the great hospitals in this country could not do and did not attempt to do. The Polyclinic did give, and hoped to give in ever-increasing measure, to a class who could not otherwise get it, expert medical advice which at present was at the command only of the well-to-do. The Polyclinic was also designed to give opportunities of medical education to those who had gone through the ordinary courses which qualified a man to practise but who had little opportunity of keeping themselves abreast with the ever-growing mass of medical knowledge. There was yet a third branch of the activity of the Polyclinic to which he would venture to call the attention of that audience, and it was perhaps the branch which they in this country were most apt to neglect. The growth of medical knowledge was one of the most remarkable scientific facts of the last half-century, for it was in the last half-century that the medical profession had become not merely admirable masters of the practical art of healing, but acquainted scientifically as well as empirically with the causes of many of those maladies with which they had to deal. Could they, he asked, honestly say that in the great development of medical knowledge and therapeutic science this country had taken the lead which it ought to have taken? When he had made all allowance for the great claims on the gratitude of the world for anæsthetics and antiseptics the fact remained, so far as he could judge, that we could not say as compared with Germany or with France or with Italy that we had done all that perhaps we might have done as pioneers of medical discovery. If the question were to be

answered in the negative did they not think that the public, the unprofessional and the unscientific public, were in part to blame for that state of things? Did they think that England had shown a recognition of the duties which fell upon her in this matter? They were proud to say that in this country they left to private enterprise and to private benevolence duties which in other and less fortunate countries were entrusted to the Government. That was true, but if that policy was to be successful they must have the private enterprise and private benevolence, and had they shown the possession of those great qualities in that particular to the extent that they ought to have done? Personally he grieved to say that he had no doubt as to the answer that should be given. He did not believe that any man who considered the equipment of their universities, of their medical schools, and of other places of education could honestly say in his heart that they had done enough to equip research with all the costly armoury that research must have in these modern days. The richest country in the world lagged behind Germany, France, Switzerland, and Italy. Was it not disgraceful? Were they too poor or were they too stupid? Did they lack the imagination required to show what these apparently remote and abstract studies did for the happiness of mankind? They could appreciate that which obviously and directly ministered to human advancement and human felicity, but they seemed somehow or another to be deficient in that higher form of imagination, in that longer sight, which recognised in studies deficient in obviously necessary or immediate result the foundation of a knowledge which would give far greater happiness to mankind than any mere immediate material industrial advancement could possibly effect. He greatly feared that lacking that imagination they had allowed themselves to flag in the glorious race which was now run by civilised countries in the pursuit of knowledge, and that they had permitted themselves to far too large an extent to depend upon others for those additions to knowledge which surely they might have made for themselves. He hoped that the result of that evening might be that the Polyclinic which was devoted to the great cause of research might obtain that assistance which was required to make it the useful institution that it potentially was and that it only required their aid fully and perfectly to become. He hoped he had not pleaded in vain, at all events the cause was one in which he firmly believed, and if this country allowed itself to be passed in the race he should regard it as a greater national calamity than the loss of a market here or some national contretemps there. He should feel that the highest life of the nation had proved itself inadequate to the national necessities and needs.

Sir W. BROADBENT, in responding, said that it was impossible to over-estimate the gain to the Polyclinic of Mr. Balfour's advocacy. He was not only leader of the House of Commons but in this country one of the leaders of thought. At the Polyclinic no patient was made the subject of experiment which was not as much for the benefit of the patient as of the hospital, and the patient was watched with a vigilance and intelligence which was not possible in the best organised hospital.

Mr. JONATHAN HUTCHINSON said that the Polyclinic was in correspondence with medical men in all parts of the world, and his experience was that patients had no objection to the closest investigation of their cases if it would be of service to their fellow-creatures.

The DUKE of MARLBOROUGH then proposed the toast of "The Empire," to which Sir J. COCKBURN, Agent-General for South Australia, replied, remarking that the Polyclinic was essentially an Imperial institution and promised to be the Mecca of medical lore.

Mr. LIONEL PHILLIPS also responded, and the "Health of the Chairman," proposed by the BISHOP of LONDON, terminated the proceedings.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6704 births and 3689 deaths were registered during the week ending May 18th. The annual rate of mortality in these towns, which had declined from 20·2 to 16·5 per 1000 in the seven preceding weeks, rose again last week to 16·8. In London the death-rate was 15·8 per 1000, while it averaged 17·4 in the 32 provincial towns. The lowest death-rates in these towns were 8·9 in Croydon, 12·6 in Brighton, 12·8 in Leicester, and 14·0 in Oldham; the highest rates were 20·0 in Liverpool, 20·7 in Manchester, 22·0 in Sunderland, and 22·1 in Preston. The 3689 deaths in these towns included 372 which were referred to the principal zymotic diseases, against 394 and 381 in the two preceding weeks; of these, 150 resulted from whooping-cough, 81 from measles, 48 from diarrhœal diseases, 45 from diphtheria, 31 from scarlet fever, 16 from "fever" (principally enteric), and one from small-pox. No death from any of these diseases occurred last week in Huddersfield; in the other towns they caused the lowest death-rates in Plymouth, Norwich, and Newcastle, and the highest rates in Swansea, Salford, Sunderland, and Gateshead. The greatest mortality from measles occurred in Portsmouth, Wolverhampton, Birmingham, and Sunderland; and from whooping-cough in West Ham, Wolverhampton, Bristol, Birkenhead, Preston, Bradford, Hull, Sunderland, and Gateshead. The mortality from scarlet fever, from "fever," and from diarrhœal diseases showed no marked excess in any of the large towns. The 45 deaths from diphtheria included 14 in London, four in Burnley, four in Leeds, three in Sheffield, and three in West Ham. One fatal case of small-pox was registered in Liverpool, but not one in any other of the 33 large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylums hospitals during the week ending May 18th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2052, against 1705 and 1913 on the two preceding Saturdays; 323 new cases were admitted during the week, against 198, 371, and 397 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 286, 251, and 237 in the three preceding weeks, rose again last week to 249, but were 46 below the corrected average. The causes of 30, or 0·8 per cent., of the deaths in the 33 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, West Ham, Leicester, Bradford, Newcastle, and in 13 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Blackburn, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had decreased from 24·1 to 19·3 per 1000 in the six preceding weeks, rose again to 20·2 during the week ending May 18th, and was 3·4 in excess of the mean death-rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 16·0 in Dundee and 18·9 in Perth and in Paisley to 21·6 in Greenock and 23·5 in Perth. The 633 deaths in these towns included 41 which resulted from whooping-cough, 18 from diarrhœa, 15 from measles, six from diphtheria, four from "fever," three from small-pox, and two from scarlet fever. In all, 89 deaths were referred to these principal zymotic diseases last week, against 83 and 99 in the two preceding weeks. These 89 deaths were equal to an annual rate of 2·8 per 1000, which was 1·1 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 39 and 49 in the two preceding weeks, declined again last week to 41, of which 18 occurred in Glasgow, 14 in Edinburgh, five in Dundee, and two in Leith. The deaths from diarrhœa, which had been 12 and 20 in the two preceding weeks, declined again to 18 last week, and included 10 in Glasgow, four in Edinburgh, and two in Dundee. The fatal cases of measles, which had been 17 in each of the two preceding weeks, decreased last week to 15, of which nine were registered in Glasgow and four in Edinburgh. The deaths from diphtheria, which had been two and four in the two preceding weeks, further rose to six last week, and included four in Glasgow, where two of the four fatal cases of "fever" also occurred. The deaths from small-pox, which had been three, three, and one in the three preceding weeks, rose again to three last week, and were all registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 169, 125, and

116 in the three preceding weeks, further declined last week to 101, but were 17 above the number in the corresponding period of last year. The causes of 28, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 29·4, 26·5, and 27·4 per 1000 in the three preceding weeks, was again 27·4 during the week ending May 18th. During the past four weeks the death-rate in the city has averaged 27·7 per 1000, the rates during the same period being 16·6 in London and 22·2 in Edinburgh. The 182 deaths of persons belonging to Dublin registered during the week under notice were equal to the number in the preceding week, and included 10 which were referred to the principal zymotic diseases, against 10, 13, and 15 in the three preceding weeks; of these, eight resulted from whooping-cough, one from "fever," and one from diarrhœa. These 10 deaths were equal to an annual rate of 1·5 per 1000, the zymotic death-rate in London being also 1·5, while in Edinburgh it was 4·0 per 1000. The fatal cases of whooping-cough, which had been eight, nine, and seven, were again eight last week. The 182 deaths in Dublin during the week under notice included 30 of children under one year of age and 46 of persons aged upwards of 60 years; the deaths of infants corresponded with the number in the preceding week, while those of elderly persons showed a slight decline. Nine inquest cases and nine deaths from violence were registered during the week; and 74, or more than two-fifths, of the deaths occurred in public institutions. The causes of nine, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Inspector-General of Hospitals and Fleets Henry Charles Woods, M.V.O., has been placed on the retired list.

The following appointments are notified:—Fleet Surgeon J. H. Beattie to the *Durham*. Staff Surgeons: R. H. J. Browne to the *Osborne*, and R. H. Nicholson to the *Cressy*. Surgeons: N. H. Harris to the *Cressy*; H. L. Geoghegan to the *Herald*; and W. E. Gribbell to the *Diadem*.

ROYAL ARMY MEDICAL CORPS.

Colonel J. F. Supple, C.B., has been transferred from South Africa to India for duty. Major Townsend, Major G. B. Russell, Captain H. A. Hinge, and Captain J. R. McMunn have arrived home from India.

Civil Surgeon Matthias Frederick Foulds to be Lieutenant.

INDIA AND THE INDIAN MEDICAL SERVICES.

The King has approved of the retirement of Lieutenant-Colonel Alexander John Willcocks and Lieutenant-Colonel Hugh McCalman.

VOLUNTEER CORPS.

Artillery: 1st Shropshire and Staffordshire: George Mackie to be Surgeon-Lieutenant. *Rifle:* 2nd Volunteer Battalion the Duke of Cornwall's Light Infantry: Surgeon-Lieutenant J. C. Mackay to be Surgeon-Captain. 3rd Volunteer Battalion the Manchester Regiment: Brigade-Surgeon-Lieutenant-Colonel J. Duncan is borne as Supernumerary whilst serving with the Royal Army Medical Corps in South Africa.

VOLUNTEER INFANTRY BRIGADE.

Clyde: Surgeon-Lieutenant-Colonel W. Wilson, 1st Volunteer Battalion the Royal Scots Fusiliers, to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the Brigade.

SOUTH AFRICAN WAR NOTES.

Major C. C. Reilly, R.A.M.C., Lieutenant E. P. Hewitt, R.A.M.C., Lieutenant R. W. Michell, R.A.M.C., and Lieutenant J. Davies, M.M.S.C., are on passage home.

The following officers have arrived in England from South Africa: Surgeon-Major W. R. Crooke-Lawless, Coldstream Guards; Civil Surgeons J. Bruce, E. W. R. Crossland, H. W. Bruce, E. Mitchell, and A. H. Kirkman.

The following officers have been discharged from hospital for duty:—Captain G. S. McLoughlin, R.A.M.C., Captain H. G. Martin, R.A.M.C. Tasmanian Bushmen: Surgeon A. B. Browther and Surgeon C. Mattie

The condition of Civil Surgeon Sowden is reported to be unchanged.

It is proposed to inaugurate a stationary hospital of 50 beds at the Yeomanry depôt, Elandsfontein.

VOLUNTEER MEDICAL STAFF CORPS, LONDON COMPANIES: DINNER TO MEMBERS RETURNED FROM SOUTH AFRICA.

Surgeon-Lieutenant-Colonel J. E. Squire and the officers, non-commissioned officers, and men of the London companies of the Volunteer Medical Staff Corps, on Saturday evening, May 18th, gave a dinner at the Holborn Restaurant to welcome home the members of the corps who have returned from active service in South Africa. Among those present were: Colonel Squire, Surgeon-Major V. Matthews, and Captain L. Way, R.A.M.C., the adjutant; Surgeon-Captains H. W. Dodd, Harper, Gage Brown, Sharpe, Miles, and Warwick; Surgeon-Lieutenants Waggett, Turner, and Collier; Captain and Quartermaster Bennett; Lieutenants and Quartermasters Purcell and Heckstall Smith, and about 200 non-commissioned officers and men. Among the guests were Colonel Sir Thomas Gallwey, K.C.M.G., C.B., R.A.M.C., principal medical officer of the Home District, Colonel Monier Williams, principal medical officer of the New South Wales force, Major Wilson, R.A.M.C., Captain Ward, R.A.M.C., Major Stonham of the Imperial Yeomanry Field Hospital, Surgeon-Captain T. H. Openshaw, Civil Surgeon Green, Mr. Oliver Williams, Lieutenant Collins, Civil Surgeon A. Evans, and Surgeon-Lieutenant Granville, civil surgeon, R.A.M.C. Most of the men who have returned from South Africa were present. Colonel Squire proposed the toast, "Our comrades who are or have been on active service in South Africa," and mentioned that in the 16 years of its existence the Volunteer Medical Staff Corps had already on three occasions offered volunteers for active service. In the Soudan campaign of 1885 a large number of members offered themselves, but he himself was the only one accepted. In the Soudan campaign of 1898 the corps offered a bearer company, and when in the summer 1899 war with the Transvaal seemed inevitable, a similar offer was made. To this the usual answer was received, that it was not contemplated to make any use of volunteers; but up to the present time over 80 officers, non-commissioned officers, and men had gone to South Africa. This formed over one-fifth of the strength of the London companies and about 30 were still serving, and to them he wished a speedy and safe return. Three would never return. Of these, one, Private Williams, went out in the Imperial Yeomanry and was killed in action near Kroonstad, and Private Walker and Private Stevens met with an equally honourable death from disease. It was hoped to record their devotion to the country by some fitting memorial. To those who had returned he offered a hearty welcome after the hardships which they had undergone. They had done all that was expected of them and more and the corps was proud of them. Surgeon-Captain Openshaw, replied, and expressed his sense of the good work which the men had done. Major Matthews proposed the toast of "The Visitors" and Colonel Sir Thomas Gallwey, who was principal medical officer of Buller's force in Natal, replied, and spoke very highly of the work done by the Volunteer Medical Staff Corps in all the different forces in which they had served. Major Stonham urged that the field hospital and the bearer company should always be under the same command. Colonel Monier Williams had nothing but praise for the way in which the medical arrangements had been carried out under very severe circumstances. He mentioned that there were many medical men and medical students serving as combatants, and that he had had to obtain permission to call upon some of them to undertake medical duties, in which they had proved very successful.

THE WAR IN SOUTH AFRICA.

We are mainly indebted to Lord Kitchener's laconic and business-like telegrams for all we know about the progress of military operations in South Africa. Although it cannot be said that any large or striking success is recorded as having been achieved in any particular telegram—the enemy being too wily and adroit to give the chance of it by making a stand in any force—Boer losses are steadily going on and the amount of them in the aggregate when several telegrams are taken into account is very considerable. The Boer losses in food, forage, ammunition, horses, and stock cannot, it is certain, go on for ever, however long and disappointing this method of reaching the end may be. There is no doubt that both sides—British and

Boers—are heartily sick of the war: the former in making fatiguing marches in pursuit of an enemy they fail to catch and the latter in making efforts to escape and in frequent trekking. In the sick returns enteric fever still occupies a prominent place. Plague happily seems to be making no serious progress. We lately called attention to the introduction and successful working of a field-force-canteen system in the army of South Africa. We may call our readers' attention to a very interesting communication published in the *Spectator* of May 18th from Mr. J. W. Fortescue under the head of "Coöperation for the Army." This communication and the editorial note thereon are well worthy of being read at the present time when so much is being said and written about army reform.

THE CARE OF THE WOUNDED IN NAVAL WARFARE.

In an article occupying two-thirds of the *Archives de Médecine Navale* for March Dr. Léo reviews the important question of the removal and accommodation of wounded men in naval warfare. "One may say without exaggeration," says Dr. Léo, "that as regards regulation and installation the arrangements for succouring the wounded during combats at sea have not advanced a single step for the last 30 years." Dr. Léo supports his accusation with exhaustive references to official publications and documents, as well as by quotations from several authoritative writers whose descriptions of the existing arrangements for the wounded in particular instances could not be more condemnatory. The problem to be solved is a complex one, bristling with difficulties in every direction. Unless the necessary space is provided in the original plans when the framework of a vessel is under construction it is hopeless to expect that on completion she will possess adequate medical and surgical accommodation. The reservation *ab initio* of sufficient room for hospital wards and annexes and of sufficiently spacious avenues leading down to them is absolutely essential, but, as Dr. Léo observes, it is of equal importance that the installations which have obtained sanction should not be modified subsequently out of all recognition during the armament and equipment of the vessel. In practice, unfortunately, this is what usually takes place with the most disastrous consequences.

THE HEALTH OF WEST AFRICA.

A letter from Mr. Chamberlain, the Colonial Secretary, was read by the President of the African Trade Section of the Liverpool Chamber of Commerce at their annual meeting which deserves to be recorded in connexion with the efforts which are being made by the Chamber, in conjunction with the Liverpool School of Tropical Medicine, to check the ravages of malaria on the West Coast of Africa. Mr. Chamberlain expressed his gratification at having learned that, by the generosity of a Glasgow citizen, the Liverpool School of Tropical Medicine had been able to arrange that Major Ronald Ross should proceed to West Africa. He understood that Major Ross proposed to select for the experiment of trying whether the extermination of the anopheles mosquito can be effected a town either in Sierra Leone or on the Gold Coast, and the governors of those colonies had been requested to afford him all the assistance in their power. The Colonial Secretary further stated that he had suggested to the Secretary of State for War that the officers of the Royal Army Medical Corps in Sierra Leone would probably be able to give material help if the experiment should be made in Freetown. The President mentioned that the Glasgow citizen referred to in Mr. Chamberlain's letter, who desired to remain anonymous, had given a donation of £1000.

THE SYRACUSA CONVALESCENT HOME, TORQUAY, FOR WOUNDED AND INVALIDED SOLDIERS AND SAILORS.

The half-yearly meeting of the subscribers of this home was held on May 6th under the presidency of Colonel Stovell. Mr. J. Quick reported that during the past six months 66 fresh cases had been admitted, principally patients recovering from enteric fever, only eight being convalescent from wounds. 192 cases have been admitted since the opening of the institution, and the general conduct of the men had been very good. The expenditure for the half-year amounted to £475, and there was a favourable balance. Colonel Stovell stated that the difficulties with which the committee have had to contend relative to the treating of the men to drink have been overcome by the adoption of a new rule prohibiting the patients entering public-houses. Any infringement of this rule renders the men liable to instant dismissal. Surgeon-General G. J. H. Evatt of Devonport had agreed with the committee that the rule was essential.

DEATHS IN THE SERVICES.

Deputy Inspector-General Daniel Finucane, R.N., on May 15th, at Southsea, aged 72 years. He entered the Navy in 1851, and retired with the rank of Deputy Inspector-General of Hospitals and Fleets in 1883.

Brigade-Surgeon William Beale Wallis, A.M.D., retired, at Colchester, on May 6th, aged 71 years. He joined the Army in 1853, became Surgeon in 1862, Surgeon-Major in 1873, and retired eight years later.

Deputy Surgeon-General William Johnstone Fyffe, A.M.D., retired, at his residence at Clifton, near Bristol, on May 17th, aged 75 years. He entered the Army as Surgeon in 1847, and retired in 1871.

Captain H. A. L. Howell, R.A.M.C., is the recipient of the Parkes Memorial Prize and the bronze medal for the best essay on military hygiene.

Correspondence.

"Audi alteram partem."

"LOCAL v. GENERAL ANÆSTHESIA IN CERTAIN CASES OF ABDOMINAL SURGERY."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of May 11th, p. 1322, Mr. T. H. Morse makes the, to my mind, somewhat extraordinary statement that "the causes of shock are especially twofold—viz., the anæsthetic and the extent of injury to the nerve structures produced by the operation." With regard, first of all, to the extent of the nerve injury produced by the surgeon as a shock-determining factor, I should have thought that the nature of this injury and the seat of it were of far greater import in determining the amount of shock than the extent of it. Compare, for example, the amount of shock that usually accompanies an amputation through the shoulder-joint for, say, a sarcoma of the head of the humerus, with that which may be expected to result from the operation of nephrectomy for a similar growth of the kidney. In the first case the injury to the great nerve trunks of the brachial plexus is infinitely greater in extent than is the nerve injury in the second case; yet it is well known to both surgeons and anæsthetists that there is hardly any major operation that is attended with so much danger to life from shock as is that for the removal of a diseased kidney.

With regard to the effect of the anæsthetic *per se* as being one of the "especial twofold factors" in the production of shock I can only say that in my experience—and I believe my opinion would be supported by the majority of anæsthetists—such a statement cannot be said to rest upon facts of clinical observation. I am unable to ante-date my memory to the pre-anæsthetic days, but the experience gained by administering various general anæsthetics to many hundreds of patients entitles me to express my conviction that in the large majority of cases the effect of the anæsthetic is undoubtedly to diminish rather than to increase the shock which is necessarily attendant upon all surgical operations of any degree of magnitude. I have on many occasions started to administer a general anæsthetic (gas and ether, chloroform, or a mixture of chloroform and ether) to a patient with a feeble, irregular, and frequent pulse, and have found that after complete anæsthesia has been produced for a short time the pulse becomes stronger, more regular, and less frequent and that this improved condition of the circulation has been maintained throughout the operation.

The cases referred to by Mr. Morse as being those in which a general anæsthetic is especially contra-indicated are cases of "acute peritonitis, internal hæmorrhage, and intestinal obstruction," and in support of this contention he records the notes of five cases that he has operated upon under local anæsthesia. In four out of the five cases he says "the operation was followed by no shock," or "no shock was caused"; and yet in one of these (Case 2) the hand was introduced into the abdomen "for the purpose of removing

blood-clots, of which the whole cavity was full." A proceeding entailing such manual manipulation of all the abdominal organs as this would necessitate could hardly, one would think, be accomplished by the surgeon without *some* shock resulting, though if he were particularly dexterous this might be reduced to the least degree. It would be interesting to know what Mr. Morse exactly understands by "shock" and the symptoms he relies upon for gauging its intensity.

In contrast to these five cases operated on under local anæsthesia Mr. Morse records the case of a woman, aged 42 years (Case 6), to whom ether was administered for the relief of incomplete intestinal obstruction, in whom the stomach contained "fæcal matter" at the time of the operation. This patient died from suffocation caused by sucking vomited matter into her lungs whilst under the anæsthetic. Of such cases Mr. Morse truly says: "When ether or chloroform are given it is very likely that while the patient is unconscious some of the fæcal matter will be regurgitated from the stomach and sucked into the air-passages," and on this account principally, he says, "all of these are cases for operation with a local anæsthetic."

I would like to point out to Mr. Morse a very obvious and simple proceeding which entirely removes this danger. It is a precautionary measure that I have adopted for several years past and that is doubtless also frequently practised by other anæsthetists in certain cases of intestinal obstruction requiring an anæsthetic for an operation. It is to pass an ordinary flexible stomach-tube into the stomach before commencing the anæsthetic and so withdraw the contents, and, if necessary, wash out the stomach as well. If on account of the patient resenting it there is difficulty in doing this it can be safely done as soon as he is under the anæsthetic and before the operation is commenced. Only during the past week I was called upon to administer a general anæsthetic—chloroform I selected—to a woman in almost identically the same condition as the patient above referred to by Mr. Morse, and had I not resorted to the precaution I have above mentioned (which in this case resulted in the removal of about a pint of fluid from the stomach) the patient would have been exposed in a similar way to the risk of being drowned in her own vomit. As it was, she took the anæsthetic without causing the slightest alarm to either the surgeon or myself.

The introduction of reliable and safe local anæsthetics is undoubtedly a great boon to the operating surgeon, though whether it is more advisable to use one of these than one of the well-recognised general anæsthetics in the class of cases Mr. Morse specifies it is not my object in this letter to discuss. I will only say that I cannot recall a single case of this nature where I have thought that the shock of the operation has been materially increased by the administration of a general anæsthetic, when this has been given by a skilled expert; nor have I so far, for reasons of safety, had to refuse to administer a general anæsthetic to such a case when the surgeon has considered it in the interests of his patient to perform an abdominal section.

I am, Sirs, yours faithfully,

Norwich, May 13th, 1901. SYDNEY H. LONG.

"LEGISLATION AGAINST NATIONAL INTEMPERANCE."

To the Editors of THE LANCET.

SIRS,—In his letter in THE LANCET of May 11th, p. 1365, Dr. Archdall Reid expresses some surprise that I should have failed to grasp his meaning on this important question of alcohol and heredity.[1] I think that I may well be forgiven the apparent dulness of my perception centre when one considers that Dr. Reid takes up a position diametrically opposed to all temperance reformers, and further, that he takes his stand on premisses which, when fully examined into, he himself acknowledges to be untenable. What are these? In his earlier writings he started with the contention, "that the craving for alcohol, like sexual love, is an instinct not an acquired habit." And upon this he has built his own peculiar logical system. By-and-bye he came to recognise that his foundation was unsound and he altered it, but notwithstanding this change of foundation his structure remains the same. Dr. Reid found out that he must broaden his foundation, or rather that he must have two foundations. He calls these "factors" and he employs the terms "inborn capacity" and "acquired factor." To give his own words (1) "This capacity for enjoying alcohol is comparable to the inborn capacity for enjoying sugar or salt, or tobacco, or sexual indulgence, or so forth; (2) the second necessary factor in an inebriate's crave, the acquired factor, is the memory of the delights conferred by former acts of drinking."[2] The second factor I pass over because we are all more or less agreed as to its truth. It is his first factor which I debate and a little reflection will convince most people of its fallacy and yet it is upon this false foundation that Dr. Reid builds his house. Let one only think of the comparison of an inborn capacity for enjoying sexual indulgence, sugar, and salt, with that of alcohol and tobacco. Why not add opium and arsenic? The various points compared are not parallel. Sexual indulgence, along with the tastes for sugar and salt, are essentials, tobacco and alcohol are not essentials. Sexual indulgence is necessary for the propagation of the race, sugar and salt are essentials of our life, but tobacco and alcohol are not essentials and the taste for them is entirely an acquired habit. An infant takes to sugar and salt as it takes to its mother's milk, but I never yet heard of an infant taking to tobacco or alcohol. Dr. Reid has apparently been a better boy than some of us. I am certain that he never smoked his father's black pipe, for if he did he would never have written about the inborn capacity for enjoying tobacco.

So much for the theoretical part of Dr. Reid's views. His views as to its application appear to my mind quite as fallacious. "We must either permit alcoholic selection to run its level course or we must assist it by artificial selection and so prevent much of the misery by weeding out the obviously unfit either by forbidding marriage to drunken individuals or in the married by preventing the procreation of children by separating the parents or such other means as science may devise."

As a practical Christian people we dare not allow alcoholic selection to run its level course. If we did it would mean that in our religious and in our social systems there was such a deep moral blot as would bring about the destruction of our race. The advice is cold and callous and we cannot follow it, for as a people we believe that by encouragement and by making it easy to do right and difficult to do wrong we can wean men and women from evil courses of life of all kinds. We may advise against, but we cannot forbid, marriage in adults. That would mean an encroachment on the liberty of the subject which no Anglo-Saxon will tolerate. As to preventing the procreation of children by separating the parents it is pleasing to say that this is the only portion of Dr. Reid's scheme which bears scrutiny. Where both parents are drunken this may be advisable and something of this kind may be accomplished in the future. As to the other means which science may devise for preventing the procreation of children, one knows of no other means unless it be the French scheme which is as disgusting a subject as human beings can deal with and, as Sir Douglas Maclagan said, people who practised it had lost all sense of self-respect. Dr. Reid has modified his theory once and hence there is hope for him. Let us trust that he will live entirely to change his views, theoretical and practical. I am presently engaged in studying the subject of the distribution of alcoholic beverages among various peoples and hope shortly to publish my results when I shall give precise references to authorities.

I am, Sirs, yours faithfully,

Leeds, May 14th, 1901. GORDON SHARP.

To the Editors of THE LANCET.

SIRS,—The correspondence on the temperance question is one of absorbing interest to medical men. The lay public naturally look to our profession for guidance in this matter and it therefore behoves us to be very sure of our ground before we give our approval to any scheme of temperance reform. A commendable effort is now being made to get to the root of the matter and apparently there are two schools of thought giving publicity to their views in your columns. The one, ably represented by Dr. T. S. Clouston, holds that we must look for success to some form of prohibitive legislation; the other, of which Dr. Archdall Reid is the exponent, asserts that all prohibitive temperance legislation has failed in the past and is assuredly foredoomed

[1] THE LANCET, April 27th, 1901, p. 1233.

[2] Brit. Med. Jour., Sept. 16th, 1899

to failure in the future for the reason that the alcoholic diathesis is hereditary.

As stated by Dr. Walter Kidd the controversy really hinges on the question as to whether acquired characters can or cannot be transmitted. Assertions that they can be have been made and denied, what we must have, however, is proof; man, in the course of his life history, acquires thousands and thousands of characteristics, is there any proof that he has ever transmitted one of these acquirements to his offspring? Obviously the onus of proof lies with those who make the assertion; it is, of course, impossible for those who dispute it to prove a universal negative. It seems to me that if the transmission of acquired characters can be proved (and in the wide range of the whole animal kingdom, if such a transmission exists, surely there must be thousands of examples) then Dr. Reid's theory falls to the ground. If, on the other hand, no proof can be adduced, then we, as scientific men, must be very chary of supporting any scheme of reform which ignores a fundamental principle in the causation of drunkenness.

May I add, and I am open to correction, that it appears that some of your correspondents rather confuse Dr. Reid's views with those of Weissmann and other biologists; but if I am right Dr. Reid has repudiated Weissmannism properly so-called, and only follows him so far as to agree that acquired characters are not transmissible. Then, again, after Dr. Reid's destructive criticism[3] of Dr. Berry Haycraft's Milroy Lectures it is hardly correct to assume, as has been done by Dr. Walter Kidd, that the views of these two gentlemen are identical. Trusting you will allow the importance of temperance reform and the hope that this discussion may lead to its being based on sound scientific principles, to be my excuse for troubling you with this letter,

I am, Sirs, yours faithfully,

Portsmouth, May 14th, 1901. A. MEARNS FRASER.

To the Editors of THE LANCET.

SIRS,—Dr. Laing Gordon in his letter in THE LANCET of May 18th, p. 1427, has somewhat obscured the issue raised in my letter of May 11th, p. 1365. It is not the manner in which inborn characters are transmitted, nor the view held by Dr. Archdall Reid of Weissmannism as a great body of doctrine, which is material, but the fact that an integral part of that system is adjudged by high authorities to be "not proven." It is the assertion that only inborn characters are transmitted which is challenged and this is vital to Dr. Reid's position as to alcoholism.

I am, Sirs, yours faithfully,

Blackheath, May 20th, 1901. WALTER KIDD.

MOTOR-CARS FOR MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—Being one of the first medical men in England to adopt the automobile as a means of locomotion and being written to frequently for my opinion and experience of this means of getting about it has struck me that a few words of advice might help those medical men who contemplate changing the horse for the motor. The principal points for intended purchasers to keep in view are: First, every maker will assure you that his car is the best on the market and never breaks down; and, secondly, any maker of repute will give a trial run. Before buying try several makes and compare experiences, but do not decide unless you have had at least 25 miles' run, as many of the smaller cars seem excellent when only tried over a few miles of good road, but in spite of what the makers say to the contrary they often fail on a steep hill.

The three types of car on the market are electric, steam, and petrol.

1. Electric may be the cars of the future, but in their present state they are not suitable for medical men. The cost of the up-keep is immense owing to the short life of the accumulators, the distance run on one charge is too short for an average medical man's round, and they take a long time re-charging.

2. The steam-car. The best known at present is the "Locomobile"; it is a neat-looking machine and a good hill-climber, but for a medical man it is not suitable, no matter what the makers may say: (1) it is too light and must have pneumatic tyres, and the liability to puncture is a fatal obstacle, as the medical man cannot choose his road, and a puncture when on an urgent call would be just as likely to happen as at any other time; (2) it takes too long to get up steam; and (3) it uses so much petrol that it is more than four times as expensive per mile as the Benz, Mors, or Daimler. The constant anxiety of watching the water-gauge lest the water in the boiler gets too low and a tube burn out is a nuisance to a medical man; then the water-tank only holds enough for about from 12 to 15 miles. It would do for short distances on good roads, but not for the rough use of medical work.

3. Benz, Mors, and Daimler cars are driven by explosions of petrol mixed with air; in the Benz and Mors ignition is by electric spark only—in the Daimler by electric or lamp. The Benz and Mors are belt-driven and in wet weather the belts are liable to slip. Several of my friends have tried the Benz, but have given them up for other makes. They are light and, judging from my friends' experiences, this has been an advantage, as they have had to push. In addition to the belt trouble with Mors cars they are fitted with pneumatic tyres, and if these are replaced by solid tyres the jolting on the ordinary road breaks the spokes. They are much too complicated for anyone but an engineer or someone with a love of engineering to take as a substitute for horses.

The Daimler is, to my mind, the best car on the market at present. The principle of the engine has proved most successful, and is that of the Panhard in France and Canstatt Daimler in Germany. I have driven my present car for about a year and a half and have never once failed to keep an appointment nor have I ever had to be towed home, though I have towed home Benz cars, Mors, and Locomobiles belonging to friends and acquaintances. After a year and four months' running I drove to Coventry from Windsor to have the car overhauled and varnished. It did the journey without having to stop except once to fill the petrol tank from my extra supply can. When tested at the works the engine gave five and three-quarter B.H.P., and this at the end of over a year's wear during which it had run about 6000 miles. My present car cost about £450 and is a mail phaeton with moveable hood and is the type of car I would advise those who can afford to pay so much for a machine to buy.

I believe that the car most likely to suit medical men will be a car of which I saw drawings, &c., at Coventry. It will, I am informed, cost little over £250 and drive by means of a live axle. The amount of repairs required on my car for one year and three months' wear did not amount to £10. I have since had a new water-tank and top-speed gear wheel. I have spent a certain amount on improvements such as wheel-steering and compression plates on pistons to increase horse-power, but these things were not necessities and are fitted to all new cars now.

My advice is, Get a good car from a good maker, leave experimental cars to men who have time to make experiments, and when you have a car take a personal interest in it. I might mention that my experience has been of nearly three years' duration and I have had much less worry than when I drove horses.—I am, Sirs, yours faithfully,

Windsor, May 20th, 1901. H. E. BRUCE PORTER.

To the Editors of THE LANCET.

SIRS,—In the discussion now going on in your columns *re* motor-cars perhaps my experience may be of interest. I have had a motor now nearly 12 months. I had difficulties and mishaps at first, but these were chiefly due to want of knowledge regarding the working of the machinery, and any man must expect this until he gets to thoroughly understand his car. My car now, after a year's running, is going better than ever it did; I now have very little difficulty and can rely upon it. It was made by the Yorkshire Motor Car Company of Hipperholme. It is a petrol car with tube ignition and has a double-cylinder engine. Hence it vibrates less and makes less noise than most petrol cars. It will mount any hill which a horse and trap can mount. The tyres are pneumatics. I have so far had only three punctures and the tyres, although I have ridden over the roughest roads, are now, after nearly 12 months' wear, practically as good as new. Steam cars have some advantages over petrol cars, but they have also a number of disadvantages, and until they are much more perfect I think a petrol car is to be preferred, and if I were going to buy another petrol car I should select one similar to that which I now possess. I may add that I used

[3] Practitioner, August, 1900.

this car in practice with success before I removed here to take up the duties as medical officer of health of Halifax.

I am, Sirs, yours faithfully,

Halifax, May 10th, 1901. JAMES T. NEECH.

"THE MEDICAL PROFESSION AND THE FRIENDLY SOCIETIES."

To the Editors of THE LANCET.

SIRS,—No attempt seems to have been made so far in this correspondence to settle what may be considered fair remuneration for club work. Both Mr. Brabrook and "A Colliery Surgeon"—the former in THE LANCET of April 27th, p. 1232, and the latter in THE LANCET of May 11th, p. 1366—ask the question, the former rightly leaving the answer to the profession, the latter declaring himself satisfied with a payment of about 4*s.* per annum. I believe few men think that club practice pays. The beginner takes it *faute de mieux* and keeps it, either because the better does not come or because the resignation of his clubs would throw them into the hands of a rival practitioner or serve to introduce an opponent. Club work is "slumped" with private work, and this "slumping" is, I contend, the main reason why the inquiry whether the former is really remunerative has not been pressed. Everybody admits that it should pay, and Mr. Brabrook places it in this respect between the attendance on the very poor and the comparatively rich.

This question of what is a proper club payment can very obviously be approached from two directions. 1. Let us imagine a medical practitioner who does club work only all his life, never having or hoping to have a single private patient. What sum should he receive? What are his wants? He must have a house, servants, and all the apparatus of medical practice. He should be able to live in fairly easy circumstances. Financially, he should be at liberty to marry and it should not be accounted a misfortune if he has two or three children. It is not too much to ask that he should be able to bring up one son to his own profession and to educate his other children in a corresponding manner. He must have occasional holidays and neither he nor his family is exempt from illness and its attendant expenses. Inasmuch as the clubs will not pension him when he is too old or too infirm to work longer for them he should be able to put away something every year for his old age. I do not think this can be done on less than £800 a year. Now £800 a year means at the ordinary rate a club *clientèle* of 4000—a number which seems unmanageable by one man. Perhaps someone with large experience of club work will tell us how many members a medical man could attend giving all his time and doing his work well. If the sum mentioned above be accepted a simple division will show what each club member should pay a year. 2. What sum does a club medical officer actually receive for each attendance? Will "A Colliery Surgeon" and others in club practice take the trouble to divide the year's club receipts by the year's attendances (presuming they are all entered) and tell us what the quotient is? I remember hearing of one provident institution in London where this sum worked out to 2½*d.*

My own feeling is that 4*s.* a year is a ridiculously inadequate payment, and I would suggest that it should be made into a retaining fee in consideration of which the medical man should attend club patients for very small payments to be made out of a special medical fund raised by separate contribution from all the members. The surplus of this fund might be divided at the end of each year as is done with the funds of slate clubs. Of course, this is a vain suggestion as long as medical men profess themselves satisfied with the ordinary terms.

I am, Sirs, yours faithfully,

Wonersh, May 13th, 1901. C. SCOTT WATSON.

"HÆMORRHAGIC TYPHOID FEVER."

To the Editors of THE LANCET.

SIRS,—In a note on hæmorrhagic typhoid fever in THE LANCET of April 20th, p. 1156, you call attention and attach importance to the history of alcoholism in the two cases of that rare affection referred to, and express an opinion as to the probability of this factor acting as a contributory cause. From this view there can be no radical dissent, but in view of the infrequency with which the hæmorrhagic diathesis is manifested in the course of typhoid fever, even in alcoholic subjects, this influence, it seems to me, must be of most subordinate significance. It appears far more likely that the widespread and profuse hæmorrhages are to be attributed to changes in the blood or vessels, or both, induced by the infective or toxic activity, or both, of the typhoid bacilli, or as a less likely possibility by some secondary infection or intoxication. The two cases in question were reported from the Philadelphia (City) Hospital where a history of alcoholic excess is the rule and that of venereal infection is common, but even here cases similar in character to those reported are, as elsewhere, most exceptional.

I am, Sirs, yours faithfully,

AUGUSTUS A. ESHNER.

Philadelphia, May 4th, 1901.

"COINCIDENT TYPHOID AND MALARIAL INFECTION."

To the Editors of THE LANCET.

SIRS,—In a leading article in THE LANCET of May 18th, p. 1412, on this subject you comment on the term "typho-malarial" in connexion with some recent observations by Dr. J. P. Lyon of Buffalo, and if you will allow me I would like to draw attention to some observations of my own as summed up in the Alexander Prize Essay for 1881—Enteric Fever as Illustrated by Army Data at Home and Abroad. The composite word was coined by Dr. Woodward during the civil war in America to meet cases where "the attack was of a mixed character from the entrance simultaneously of both exciting agencies in the system" and by the date mentioned the name had crept into the army medical returns, but the curious feature observable was that while from the typically malarial countries no clear recognition of this hybrid disease was discernible in the statistics it figured decidedly in the returns from other stations where malarial fever was not common and where the remark appended was not uncommon that the cases of paroxysmal fever had "originated elsewhere." After pointing out that the difference in causation between the paroxysmal fevers and enteric fever was deducible even from the statistics I noted that "the onset of febrile disturbance in the tropics may simulate ague," and that "ague and enteric fever may be often combined in the sense that enteric fever may occur in a malaria-impregnated person," and this latter virus by being roused into activity may modify the febrile disturbance and other symptoms, and came to the opinion that while one or two cases recorded by Dr. Massy from Newera Ellia in Ceylon seemed to support the view of a simultaneous entry of the two agencies in the system at the same time, yet that the majority of the asserted hybrid cases—based on clinical data and especially temperature variations to be found at the onset, mid-period, and decline of the fever—could be explained by the results of the old malarial taint or by deviations from the supposed typical temperature chart common in enteric fever in aliens in tropical countries and also observable in the same disease at home irrespective of malarial taint. The inference I drew was much the same as that contained in the summary at the end of your article, that the term "typho-malarial" to express a distinct disease was untenable, and subsequent experience has but confirmed the conclusion that if this asserted hybrid is to be recognised in nomenclature at all its proper status is as a variety of enteric fever dependent on the prior existence of the malarial parasite in the body.

I am, Sirs, yours faithfully,

FRANCIS H. WELCH, F.R.C.S. ENG.,
Surgeon-Colonel (retired) Medical Staff.

Brandram-road, Lee, S.E., May 20th, 1901.

PROTRACTED GESTATION.

To the Editors of THE LANCET.

SIRS,—This morning, with some difficulty, I delivered a primipara of a male child (weight, 9 pounds 10 ounces), in every respect well developed. The last day of the mother's last period was July 2nd, 1900—that is, 320 days from the birth of the child this morning. I have made every and all possible inquiries respecting the aforesaid dates and can thus absolutely confirm them. The monthly nurse was engaged from

April 1st. I think that this should be recorded, and thus beg you to do so. I am, Sirs, yours truly,

G. H. HAMES, F.R.C.S. Eng.

Hertford-street, Mayfair, W., May 18th, 1901.

"THE CASE OF AN ELECTION."

To the Editors of THE LANCET.

SIRS,—I am much astonished that no reply has been forthcoming from the authorities of the Samaritan Hospital to Dr. Shaw-Mackenzie's letter in THE LANCET of April 6th, p. 1044. The case is even stronger than Dr. Shaw-Mackenzie puts it. I find that Dr. Shaw-Mackenzie's name appears in the list of the staff of the Samaritan Hospital in Churchill's Medical Directory for 1901. I have made inquiry into the matter and I have satisfied myself that the list came to Messrs. Churchill from the hospital in the usual way. It seems an extraordinary state of things that a man can be elected to a post and then removed from his duties without a word of explanation or regret. No "legal opinion" can possibly justify such treatment.

I am, Sirs, yours faithfully,

JAMES B. BALL.

Upper Wimpole-street, W., May 21st, 1901.

THE RECENT MEETING OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON: A CORRECTION.

To the Editors of THE LANCET.

SIRS,—I desire to point out that in your report of the meeting of the Comitia of the Royal College of Physicians of London in THE LANCET of May 18th, p. 1410, the name of Dr. James Taylor has been wrongly mentioned as the seconder of Dr. Norman Moore's motion instead of my own. As a member of the Committee of Management I seconded the adoption of their report.

I am, Sirs, yours faithfully,

May 20th, 1901. FREDERICK TAYLOR.

"ROYAL ORTHOPÆDIC HOSPITAL."

To the Editors of THE LANCET.

SIRS,—Mr. Marks has not answered the letters of the senior house surgeon of the Royal Orthopædic Hospital and of myself—in THE LANCET of April 13th, p. 1106, and March 9th, p. 739, respectively—setting forth reasons against the sale of the site. He assumed the reins of power in that institution by means of votes created for the purpose of defeating the scheme of purchase of the former committee. He holds power by the same following of votes. Under these circumstances he refuses to give reasons for suddenly changing his views and insisting upon the sale of the hospital. The objections to the sale of this valuable freehold, almost the only asset of the hospital, remain unchanged. We who have resisted the proposal to sell have increased the sums offered from £28,000 to over £37,000. But we do not wish to sell and believe that removal to a leasehold in an out-of-the way quarter would be disastrous to the financial and social future of this old-established institution. Why should Mr. Marks maintain an obstinate silence on a matter of vital importance to a public charity? Why should he write a private letter to the Editors of THE LANCET in answer to the comments contained in the article of April 6th last, p. 1025? What has he to say to the editors of a medical journal that he cannot say to its readers? I inclose my card.

I am, Sirs, your faithfully,

May 19th, 1901. A GOVERNOR OF THE HOSPITAL.

A DETAIL IN THE COSTUME OF MAYORS

To the Editors of THE LANCET.

SIRS,—May I ask if any of your readers can inform me if the mayors of Oxford and Cambridge, should they happen to be members of the university, wear their academical hood over the official robe. Is it usual or correct for provincial mayors who are also doctors of medicine to wear their hoods over their mayor's robes on official occasions?

I am, Sirs, your faithfully,

May 20th, 1901. HISTORICUS.

DOMESTIC DRAINAGE IN PARIS.

A HOUSEHOLDERS' SYNDICATE TO RESIST SANITARY REFORM.

(FROM OUR SPECIAL CORRESPONDENT.)

DOMESTIC sanitation is making but slow progress in Paris. The sanitary authorities hoped, and thought, that the drainage of the great majority of Paris houses would be terminated by the time that the Universal Exhibition opened its doors in 1900. They did not count, however, on the tenacity, ingenuity, and avarice of the owners of house property. The reforms projected, it is true, were not of a nature to injure the interests of householders. They represented, on the contrary, what was and has been proved to be in the best interests of property owners; but they entailed a preliminary outlay, and the certainty of an immediate loss, however great might be the prospective gain, has proved a serious obstacle. Originally the sewers of Paris were not intended to receive domestic drainage. They had their outfalls into the Seine, and the river is too small and too far inland to receive the drainage of the houses. Slop-water was allowed to flow into the sewers, but the closets all drained into cesspools or into portable tubs or pails. In the course of time, however, and after endeavours extending over many years, the town has acquired sufficient land at Gennevilliers, Achères, Triel, and Méry to receive the whole sewage of Paris, some 180 000 000 cubic metres per annum, and throw it on to the soil. Being thus utilised for agriculture and purified there was no longer any objection to draining the closets into the sewers, for the crude sewage was henceforth not allowed to flow into the river. The completion of these works was inaugurated on July 8th, 1899, and they have already been described in THE LANCET.[1] Simultaneously with this great work for the disposal of the sewage more sewers were built in the town and many of the old sewers were repaired or relaid. Then pressure was brought to bear upon householders so that they should substitute for their cesspools or their pails properly flushed water-closets draining direct into the sewers. By the end of the year 1899 there were only 1635 houses in Paris which were thus drained and the mortality that year was equal to 24·1 per 1000 of the population. In 1893 there were 4298 houses with water-closets and the mortality was 21·7 per 1000. In 1896 there were 9460 houses draining direct into the sewers and the mortality was equal to 19 per 1000 inhabitants for the entire town. Of course, there were other causes that contributed to this reduction in the death-rate; but, nevertheless, there has been a notable reduction in the death-rate accompanying the improvement in domestic drainage.

At the present moment there are in all 78 000 houses in Paris and of this number nearly 24,000 houses now possess water-closets and drain direct into the sewers. For the remaining 54,000 houses there are still in existence 47,913 cesspools, 21,813 *tinettes filtrantes* (metallic pails which while retaining the solid matter allow the liquids to flow to the sewer), and 11,909 wooden tubs or pails which retain both solids and liquids. The cesspools are supposed to be emptied once in the year and the pails removed once a week or oftener. When the cesspool or the pail systems are employed there is no water in the closets and no syphon traps can be applied. A pan can only be cleaned with a brush and by pouring a little water on it from a hand-jug. If much water is used the proprietors soon find this out and complain to their tenants, for they object to the cost of frequently emptying the cesspool. Under these conditions the soil-pipe is always foul and there is nothing to prevent the air from the soil-pipe and the cesspool below entering the dwelling-rooms of the house. With the *tinette* the position is better; a larger quantity of water may be used since it can escape from the *tinette* into the sewer. The law of July 10th, 1894, sanctioned the raising of a loan by the town of Paris at 4 per cent. interest for the amount of £4,700 000. This was to be devoted to purchasing land sufficient to receive 200,000,000 cubic metres of sewage per annum, allowing for a maximum of 40,000 cubic metres of sewage per hectare per annum. Then there was the cost of pumps and of main

[1] THE LANCET, July 13th, 1895, p. 115, and July 15th, 1899, p. 186.

sewers to carry the sewage to this land, the cost of building new sewers in the town, of repairing old sewers, and the cost of completing and increasing the distribution of the water-supply, so that each house might have water enough to flush the closets and apply the new system of drainage destined to replace the cesspools and the pails. The second article of the law imposed on householders the obligation of draining all new buildings direct into the sewer, and all old buildings were to be altered within the space of three years. The town of Paris was to finish the entire scheme within five years, and the public works were completed, as has been already stated, in July, 1899. It is with the private owners of the houses that the difficulty and delay have arisen. The great majority were quite content to let matters rest as they were. So long as tenants were willing to rent their houses they did not feel disposed to incur the expense of reconstructing the closets and soil-pipes.

There was in existence a society called the Syndicate of Proprietors which was supposed to defend and represent the interests of the proprietors of the houses that are let out in flats, as is the case with nearly all the houses in Paris. But there was not much for this society to do, and most of the proprietors did not give themselves the trouble to join it. Now, however, the syndicate saw its opportunity. Circulars were issued to all the proprietors of houses urging them to join the syndicate, which would provide legal advice, and reminding them that by union they would obtain the force necessary to resist the imposition of new burdens. In a comparatively short time some 9000 proprietors joined the syndicate, and as each member paid a subscription of 20 francs per annum this meant an income of some £7200. With this the syndicate was able to open an office, employ a paid secretary, clerks, and solicitors, and even to issue a periodical which is their official organ. Many individual proprietors who if left to themselves would not have had the courage to resist official pressure felt bold and daring now that they had a powerful syndicate at their backs. The syndicate on its side had to justify its existence by the display of great activity. They therefore organised in a systematic manner a campaign on behalf of the proprietors and against the authorities. Two lines of action were adopted—the legal and the theoretical. Some engineers who did not theoretically approve of the scheme of drainage adopted by the authorities of the town were selected. The syndicate then succeeded in obtaining the necessary funds to appoint a committee of technicians who were sent to Berlin and other towns to report on the drainage of these places with a view to collect material for the condemnation of the Paris scheme. This committee went so far as to pretend that at Berlin the separate system had been adopted. Yet the only ground for such an assertion is that the sewers of Berlin are much smaller than those of Paris; therefore the storm overflows come sooner into action than they would do for the larger sewers of Paris. The sewage farms of Berlin consequently receive a smaller proportion of the storm-waters than the sewage-farms of Paris, but the sewage is not separated, both rain-water and sewage proper going to the sewers. Whatever dissatisfaction existed with the Paris scheme of drainage was thus fostered and encouraged and the controversies that had prevailed for many years before the actual scheme was finally adopted were thus revived and reopened. At the same time the action of the authorities was openly challenged before the courts of law.

A great blunder had been committed of which the Syndicate of Proprietors took due advantage. The law of 1894, sanctioning the sewage scheme, did not give any details as to how the domestic drainage in connexion with the scheme was to be carried out. Therefore this was settled by a decree issued by the Prefect of the Seine on Dec. 24th, 1897. Article 4 of this decree stipulated that proprietors or householders must submit their plans of domestic drainage to the administration, and that such plan should not be carried out unless it was approved and sanctioned. The municipality had established a sanitary laboratory where all closets, flushing tanks, and other sanitary contrivances were tested, and the idea was to prevent the employment of cheap, shoddy, and unsatisfactory appliances. But it was maintained that in taking these prudent and useful measures the Prefect of the Seine had exceeded his legal powers and the Council of State to which appeal was made gave a verdict against the Prefect. It was therefore necessary to withdraw the decrees and the regulations on this question, and issue a new decree simply stating that closets must be sufficiently flushed and the soil-pipe disconnected from the sewer.

Of course, all these efforts of the Syndicate of Proprietors will not prevent the drainage scheme from being carried out in the long run, but they have been successful in delaying its application. In some instances, also, the houses will not be as well drained as if the original regulations of the Prefect of the Seine had been enforced. Inferior apparatus may be employed, because the plans cannot be so strictly controlled by the municipal authorities. The fact, also, that these legal questions were pending provided a sufficient excuse for many proprietors to delay the application of the new system of drainage to their houses. Thus the new drainage scheme was not fully carried out in time for the arrival of the many visitors expected at the Universal Exhibition. Indeed, at the present moment, out of every 102 houses in Paris only 24 drain direct into the sewers. Thus, rather more than three-quarters of the houses of Paris are still in an unsatisfactory and insalubrious condition so far as their system of domestic drainage is concerned.

On the other hand, the fact that nearly a quarter of the houses in Paris are now in a fairly satisfactory condition constitutes a very effective object lesson. Though the majority of the inhabitants still live in unwholesome houses, nearly everyone has some friend or acquaintance who lives in a house that is properly drained. Everybody, therefore, has opportunities of comparing the old system with the new; and the advantages of the latter are so obvious that persons who are removing naturally seek out an apartment in a house which is properly drained. Therefore the proprietors who have applied the new system let their apartments with great facility, whereas the apartments that still drain into cesspools or pails are apt to remain tenantless for a considerable time. Thus the force of competition is showing itself as effective as the law in breaking down the resistance of the proprietors. The law is a lame instrument to employ for the following reasons. When it is recognised that the sewer in a street is in a proper condition the proprietors of the houses on either side are notified that they must abolish their cesspools or pails, provide flush tanks to their closets, and drain direct into the sewer. Three years' delay is accorded to carry out this work. At the end of the three years the proprietor may present himself to the authorities with some doleful tale of financial loss or difficulties and appeal for a further delay. But the granting of such delay pledges the proprietor to carry out the alterations when the time has expired. If, on the other hand, it is determined to enforce the law, then a sworn agent must proceed to the house and draw up an indictment (*procès verbal*). Thereupon, the proprietor is summoned before a police-magistrate and fined from one to five francs and 16 francs costs. This is a trifle, but the proprietor is also ordered to carry out the works. If he is determined to resist he refuses to do so. Thereupon a further order is issued authorising the municipality to undertake the work and charge the cost to the proprietor. Here the difficulties begin; for the proprietor will carefully watch every detail of the work done, and if any damage is produced, such as a crack in a wall, through the digging of a trench to place a drain-pipe, then he at once sues the municipality for damage done to his property. Endless litigation results, so that it is not very practical for the municipality to push matters to this extreme. Now, also, that some of the proprietors who were most violent and energetic in resisting the new scheme of drainage are beginning to realise its advantages and are voluntarily coming round and putting their houses into proper order, the municipality is tempted to let matters take their own course.

That a considerable improvement has even now been effected is shown not merely by the figures given of the number of houses draining into the sewers, but also by the fact that it has been possible to abolish the celebrated depôt at Bondy. The cesspools of Paris are emptied by contractors who convert the contents into guano or otherwise utilise them. But they were not able to deal with the whole of the soil and the town had to establish a depôt at Bondy, where for one franc per cubic metre they took what proportion of the contents of the cesspools the contractors were unable to treat. At Bondy a contractor working for the municipality extracted ammonia from this night-soil but he was very embarrassed to know what to do with the liquid residue. Though not bearing on the question at issue, it is worth noting, while alluding to the Bondy

depôt, that a very interesting experiment was made with this liquid. M. Masson, director of the municipal sanitary department, suggested that a sandy field close at hand should be utilised. Collecting drain-pipes were sunk in this field to a depth of three or four feet and the liquid residue of the contents of the cesspools, from which the ammonia had been extracted, was thrown on to this field. The water collected by the drain-pipes below came out looking, if anything, blacker and more foul than before. The contractor was for giving up the experiment, but just at that time M. Bechmann, chief engineer of the town of Paris, delivered a lecture describing experiments made in England on the bacteriological treatment of sewage. M. Masson was so impressed that he insisted on continuing the trial at Bondy. In time the sand in the field got so clogged with slime and bacterial organisms that it finally acted as a filter and the liquid, which at first came out quite black, was now clear and appeared to have been purified. But with the gradual abolition of cesspools in Paris due to the ever-increasing number of houses draining directly into the sewers the contractors found that they no longer had any need to apply to the municipality to help them to get rid of a portion of the night-soil. Thus the enterprise at Bondy has come to a natural end and one great centre of pollution and of foulness has thus happily disappeared.

In THE LANCET of August 13th, 1892, p. 396, there was published a special article on the cholera epidemic then prevailing in Paris, with a map of the neighbourhoods in which the depôts of night-soil and the manufactories of human guano were indicated. From this map it will be seen how Paris is surrounded by these depôts of filth and their accompanying unwholesome industries. This will help to show how great will be the benefit when all the cesspools are abolished and there is no longer any need for such accumulations of night-soil in the suburbs of the town. That this end should have been delayed so long is due, as explained, to an organised resistance which does not say much for the intelligence of the proprietors of the houses of Paris. Indeed, their resistance was most short-sighted. They strove to avoid the cost of putting water-closets in their houses by arguing that the separate system of drainage was the best. Undoubtedly there is much to be said in favour of the separate system, but that would not alter their position so far as domestic drainage is concerned. Whether a soil-pipe from a house leads to a sewer which only receives sewage proper or to a sewer which also receives the rain-water does not in any way alter the method of constructing and flushing the closets or of disconnecting and of ventilating the soil-pipe. But the proprietors do not seem to have really studied the question; they were content to clutch at any pretext for avoiding, or at least for postponing, the necessity of incurring some extra expense. M. le Propriétaire is not a very popular individual in the social life of Paris. While ever ready to raise the rent he shows less alacrity in carrying out any necessary repairs; and now that these proprietors, to the number of some 900, have united to resist and defer the carrying out of a law that was undoubtedly enacted for the public good they have justly brought down upon themselves more than their usual and not inconsiderable share of public opprobrium. That the abolition of pails, *tinettes*, and cesspools, and the construction of proper water-closets in all the houses of Paris, will very materially help to reduce the death-rate has been demonstrated over and over again by the experience of many towns. Those who resist such reforms assume a very heavy responsibility, for they may be accountable for the loss of many human lives.

Paris, May 20th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Ahmednagar and the Boer Prisoners.—The Decline of the Plague Epidemic.—The Punjab Government and Medical Fees.—The new Presidency General Hospital in Calcutta.—Encouragement to Native Sanitary Inspectors.—The Cost of Last Year's Famine.

THE question of the hour is the reputed unhealthiness of Ahmednagar as a station for the Boer prisoners. Apart from its selection from a military point of view it may be at once said that a place which is maintained for the stationing of about 1000 British troops ought to be suitable to receive a smaller number of Boers. The town stands on the plateau of the Deccan 2125 feet above the sea, and in the district there are hills rising to 8000 feet. During 1898 and 1899 enteric fever caused an increased mortality, but the insanitary conditions to which the disease was then attributed have been remedied, and it is said that the prevalence of the disease has much lessened since. For intermittent fever it compares favourably with India as a whole, and heat-stroke is distinctly less there than at most other stations. Dysentery is not so prevalent as in the adjoining presidency or at other stations in the Deccan, and in 1899 it was particularly free from cholera. The annual rainfall is about 26 inches, but in 1899 (the date of the last report) the water-supply was deficient owing to scanty rains. From a comparison of the admission-rate and the death-rate for various diseases apart from enteric fever the station can be fairly considered a healthy one. The death-rate from enteric fever for 1899 was 10·8 per 1000 of the strength, and in 1898 it was 6·55 per 1000. The year 1899 was exceptional, and the station did not show the diminution in the amount of enteric fever which took place nearly all over India, although in 1898 it compared favourably with the prevalence of the disease throughout the whole dependency. The death-rate for enteric fever throughout India in 1898 was 10·17, which declined to 5·14 in the year 1899.

The returns for the past week show a further great decrease in plague mortality throughout India—the figures having dropped from 6304 in the previous week to 4093. Deaths decreased in the Bengal districts from 3258 to 1707, and in Calcutta from 389 to 215. In the Bombay presidency the deaths fell from 570 to 468, and in Bombay city from 602 to 393. In the North-West Provinces the deaths also fell from 662 to 424. The Punjab alone shows an increase—viz., from 518 to 547 deaths. 20 cases of plague, however, are reported at Patiala and the disease has broken out in Allahabad. There were 5147 cases of plague vaccine sent out from the Plague Research Laboratory, Bombay, last week. Of these, 2000 went to Gurdaspur and the Sialkot district, 1407 to Simla to the Punjab, 1000 to Karachi, and 503 to German East Africa.

The Punjab Government have interfered in the matter of charges rendered on account of medical attendance on the late Maharaja of Patiala and the ladies of the palace during 1899 and 1900. One item of the account amounts to Rs. 5250 and the Lieutenant-Governor thinks this ought to be reduced to Rs. 1750 which would equal Rs. 100 per diem for attendance, and Rs. 50 per diem for the detention of the medical attendant in the Patiala State.

The new Presidency General Hospital in Calcutta is not yet open. Up to the end of March last a sum of nearly 15 lakhs was spent upon it, but it does not appear to be the intention of the local Government to proceed much further at present. The works are practically completed for the new block for males, for the nurses' quarters, and the beginning of the infectious diseases ward. The idea of a dairy has been abandoned.

The Bengal Government propose to give three scholarships of Rs. 50 per mensem tenable for one year to passed students of the Sibpur Engineering College who undergo a course of practical training under the sanitary engineer with a view to providing trained men for service under municipalities and district boards.

In the financial year 1900–1 the expenditure on famine relief is estimated to have been £4,227,000, and special advances amounting to £947,000 were made to agriculturists.

May 4th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Medical Appointments at the Royal Infirmary.

AT the meeting of the board of the Manchester Royal Infirmary held on May 20th Mr. Joseph Collier, the senior assistant surgeon, was appointed an honorary surgeon to fill the vacancy caused by the retirement of Mr. J. Hardie. Mr. Charles Roberts and Mr. Ernest W. Floyd were appointed

respectively resident surgical officer and assistant surgical officer for a period of one year from June 3rd. The chairman, Sir F. Forbes Adam, said that the special committee appointed to consider the question of rebuilding the infirmary were giving careful attention to it and proceeding as expeditiously as was possible under the circumstances. The committee of the Lunatic Hospital reported that plans for the extension of the infirmary department had been referred to the Commissioners in Lunacy for approval. The estimated cost will probably be somewhat over £12,000. The matter will come before the board again when the approval of the Lunacy Commissioners has been obtained.

The Manchester Crematorium.

The Manchester Crematorium Company have offered to hand over their property to the Manchester Corporation for the amount—between £9000 and £10,000—that has been expended on it. A deputation to the Parks Committee of the corporation explained that though public opinion was advancing in favour of cremation many people objected to a private company having control of the ashes of the dead. The authorities at Hull are establishing a public crematorium, the corporations of Liverpool and Bristol are considering the question of taking over the property of existing companies, and a Bill is now before Parliament for giving corporations the power to establish crematoriums—the word is pretty well anglicised—without applying for special local powers.

Steaming in Weaving Sheds.

A Bury firm was summoned on May 16th for using "for the production of artificial humidity—water which was not taken from a public supply of drinking-water or other source of pure water, and for not effectively purifying it to the satisfaction of His Majesty's Inspector of Factories, Mr. W. Williams, before introducing the steam into their factory." In November last Mr. Williams found that steam produced from very dirty water and which smelt vilely was brought into the shed. It was ascertained that the water was procured from the Irwell. Some correspondence with the manager ensued, and an analytical chemist expressed the opinion that there was no injurious matter in the steam. The mill was visited again on April 24th, when there was an excessive amount of steam which smelt, or, as a newspaper report more delicately puts it—"the steam scented." In reply to one of the magistrates Mr. Williams said that he would probably have accepted the statement of Sir Henry Roscoe if he had said that he found the water pure, but he could not take that of a local analytical chemist. An analytical chemist of Bury said that there was absolutely no volatile matter injurious to health in the steam and that the water was taken from a feeder which came from the Irwell higher up the valley and that it contained 27 grains of solids per gallon. Unless the Irwell has marvellously altered the water would have to be taken very many miles higher up the valley before it could be called pure. However, the magistrates, most of whom would probably be mill-owners, and the local analytical chemist whose labours would be chiefly connected with the manufactures of the district, were of opinion that the water was pure (though the steam "scented") and the summons was dismissed. Granting that the sheds have to be steamed, it is desirable in the interests of the health of the weavers that the steam should be pure and not be "scented." But some doubt must have been felt in this case, though it was dismissed, as the magistrates "agreed to state a case if required to do so by the Home Office."

The British Viavi Company.

At the Manchester County Court on May 17th the British Viavi Company and their representative, Mrs. Ellen Dobson, were sued by a young woman to recover £50 damages for breach of contract. The plaintiff was suffering from an "internal tumour," and two medical men advised an operation, but after attending a lecture by Mrs. Dobson and having some conversation with her she put herself under the Viavi treatment, which, Mrs. Dobson told her, would cure her "once for all." The sufferer was under this person's care for six months, by which time she was worse than before and she then gave up the treatment. The plaintiff removed to Birmingham, where she consulted Mr. Christopher Martin and was operated on by him, and her health was restored. Dr. Martin stated in evidence that the introduction of capsules such as those sold to the plaintiff was liable to be followed by dangerous results. Mrs. Dobson told the plaintiff that the Viavi remedies were composed of 32 vegetable ingredients. For the defence it was contended that the company did not pretend to be medical advisers, but simply sellers of "a nourishing food-product to build up nature." Mrs. Dobson said the work was educational and commercial, the former to give women "information about matters in regard to which they had been kept in ignorance." She stated in reply to the judge that she had a commission of 50 per cent. on all the Viavi food which she sold. In summing up the case Judge Parry said that it was lamentable that in a civilised community like Manchester such gross ignorance and superstition should prevail, though there always would be knaves who preyed on fools. "The defendants were going about selling worthless remedies to poor women who knew nothing about their own physical condition, and making 50 per cent. profit." He gave judgment for the plaintiff for £50, with all necessary costs on the higher scale. The love of quackery for itself and the inducements held out of short cuts to health, promised by the knaves who, as Judge Parry says, prey on the fools, will, I fear, prove stronger than his counterblast, but it is satisfactory to know that occasionally these harpies do not get quite their own way.

The Sewer Explosions.

A somewhat mysterious paragraph appeared on May 14th in one of the Manchester papers about the sewer explosions which were mentioned in THE LANCET of May 18th, p. 1416. The paragraph stated that reports were forthcoming from the city surveyor, the medical officer of health, and the chemist of the Rivers Committee, which were to disclose the cause of the occurrence. This was stated to be due to certain refuse poured into the sewers from the works of a firm whose name was given to the Rivers Committee, and who were said to have admitted that this refuse had come from their works and that they were prepared to make good the damage that had been done. "Further details it is undesirable to make public at this stage." Quite melodramatic! The people of the neighbourhood will not like the matter to end here and if a committee can do anything for them surely the joint committee appointed to make a further investigation into the matter will do so, composed as it is of members of the Rivers Committee, the Sanitary Committee, and the Paving, Sewering, and Highways Committee; for they were directed not only to investigate into the recent occurrence, but to report on the steps to be taken to prevent any such accident in the future. It will not be for the good of the city to have the matter hushed up, and for the names of those responsible for the explosions to be hidden.

May 21st.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Barry Rate-aided Hospital.

THE late Mrs. Walter Insole, the widow of a large colliery proprietor in the Rhondda Valley, has bequeathed the sum of £2000 towards the building, extension, or maintenance of a hospital or infirmary at Barry. For some few years a small temporary building has been used for the treatment of accidents at Barry and the expenses incurred have been met by voluntary contributions. As the managers were in constant financial difficulties the urban district council decided last year to take over the institution and to make it a "rate-aided" hospital. Since the beginning of the present year, therefore, the management has been in the hands of a joint committee composed of members of the urban district council and several of the medical practitioners of the town. A site has been acquired on the Buttrills and plans have been prepared for a building the erection of which it is estimated will cost about £14,000. The scheme appears to have been pigeon-holed for a time, but Mrs. Insole's legacy will no doubt stimulate those interested in the undertaking to press on with it. It is sometimes supposed that the Public Health Act, 1875, empowers sanitary authorities to erect hospitals solely for the reception of patients suffering from infectious diseases. Section 131 of the Act, however, reads "any local authority may provide for the use of the inhabitants of their district hospitals or temporary places for the reception of the sick."

Death from Anthrax.

A man employed in a Bristol tannery died in the General Hospital on May 15th from anthrax. His duties required him to handle hides, both wet and dry, and on May 3rd he noticed a small pimple on his cheek which later in the day increased in size and became very painful. On May 5th he presented himself at the hospital and was seen by the house surgeon, Mr. H. F. Royle, who diagnosed the case as one of anthrax. It was stated at the inquest that gloves and coats were provided at the tanyard in question for those workmen who handled the hides, but it did not appear whether this particular man who became fatally infected had taken the precaution to use them.

Bristol Orthopædic Hospital.

The Orthopædic Hospital and Home for Crippled Children which was established 25 years ago at Redland, Bristol, is unfortunately in a less prosperous condition than formerly, so that the managing committee have been obliged to use up the whole of the legacies of the institution in order to meet current expenses and the use of a free cot has also been withdrawn.

Swansea General Hospital.

It is in contemplation to provide at the Swansea General Hospital additional accommodation for out-patients, to include a waiting-room in which 100 persons can assemble, a nurses' lobby, two consulting-rooms, and three dressing-rooms. The cost is estimated at £1000.

Notification of Whooping-cough.

The annual report of Dr. Richard Prichard, the medical officer of health of the rural district of Llandaff and Dinas Powis, is of special interest from the fact that in this district since 1890 whooping-cough had been included in the list of diseases compulsorily notifiable. There is a population, more or less scattered, of about 23 000 persons. In 1899 there were 201 cases and 10 deaths from whooping-cough and in 1900 there were 112 cases and eight deaths. The death-rate was thus equal to 44 per million in 1899 and to 34 per million in 1900 In the whole of England and Wales the death-rate from whooping-cough in these two years was 30 and 34 per million respectively.

Heroism of a Medical Man.

A young man whilst bathing at Falmouth on May 18th suddenly shouted for help. Mr. Charles C. Bullmore, L.R.C.P. & S. Edin., hearing the alarm, went into the water without removing any of his clothes, and succeeded in dragging the man ashore, but unfortunately life was extinct.

Sanitary Condition of the Vaynor and Penderyn Rural District.

Mr. T. J. Webster, the medical officer of health for the Vaynor and Penderyn Rural District Council, in his annual report for 1900 states that in Vaynor 117, and in Penderyn 46 births were registered which corresponded to a rate of 33·4 per 1000. 63 deaths occurred at Vaynor and 26 in Penderyn, equal to a rate of 18·2 per 1000.

Health of Merthyr Tydvil.

Dr. C. E. G. Simons, late medical officer of health of Merthyr Tydvil, in his annual report for 1900 states that the estimated population was 77 024. 2658 births were registered, equal to a birth-rate of 34·5 per 1000. There were 1628 deaths, corresponding to a death-rate of 21·1 per 1000. Dr. Simons remarks that the infantile mortality was large, marasmus causing 48 deaths, disorders of digestion 97, and convulsions 72, many of the deaths from the latter being due to the ignorance of mothers in the feeding of the infants 165 children under five years of age succumbed from diseases of the respiratory system, this number being largely due to insufficient clothing. Dr. Simons urges that measles and whooping-cough should be notifiable under the Act; that the administration of the Food and Drugs Act would be more properly entrusted to the district council than to the police; and that there should be a closer supervision of the meat-supply by a qualified veterinary inspector and better accommodation for infectious diseases.

May 20th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

An Important Development in Pathology in Edinburgh.

THIS summer marks the inauguration of important changes in the pathological department of the Royal Infirmary, Edinburgh—changes which will probably have a material influence upon Scottish pathology. To understand their nature it is necessary to state that up to the present the regulation work of the two pathologists who were the officers of the department was to make post-mortem examinations more or less fully, to keep a register of these, and to demonstrate to the students who attended the dissections. In addition there was a good deal of microscopic examination of tissues, but that was extra and really unofficial work and depended upon the leisure or the ardour of the pathologists. If there were no post-mortem examinations there might be days when no responsible official would be found in the department. As regards the bacteriological investigation of special cases it was done outside the infirmary by one of the pathologists and practically as a favour. The staff were much dissatisfied with the arrangements and recently when the opportunity offered they made representations to the board on the subject. Their representations were listened to and with the aid of the enlightened medical members of the board they were finally accepted. The new arrangements are that the department is under the direction of a pathologist who devotes his whole time to the work, and under him are two assistant pathologists who may be training as pure pathologists, as physicians, or as surgeons. These latter devote three hours a day to the work of the department. The department was enlarged and fitted with bacteriological and other appliances a few years ago, so that there is now every prospect that the work will be done in a way in which it has never hitherto been possible to do it. The director gets £400 a year and the two assistant pathologists get each £50 a year. Dr. D. A. Welsh, who has been pathologist for some time and who was also senior assistant to the professor of pathology in the University of Edinburgh, has been appointed to the superior post and of course he severs his connexion with the professor of pathology. The University made no proposals by which they could retain him on their staff, and I imagine that he will also cease to be the University lecturer on bacteriology—a position which he held in virtue of his being the senior assistant to the professor of pathology. The carrying through of this scheme has been a matter of great satisfaction to those who interested themselves specially in it, and from its nature it is evident that it ought to, and doubtless will, give a fillip to pathological work in Edinburgh. It is of historical interest to record that a scheme such as that which has now been carried was submitted 10 years ago to the board of management by Dr. Russell who was then pathologist, and that it was defeated at that time.

Mr. Carnegie's Proposed Gift of Free University Education.

After a period of calm the Scottish universities have been startled by Mr. Carnegie's munificent proposal to throw their doors open to free education. When a man proposes to spend two millions in doing something it is a mere platitude to enlarge on his generosity, so more need not be said on that point. So far as can be made out the gift is not proposed as a gift to the universities but to the public of Scotland, and the object is to place university education within reach of all Scottish youths of ability free of cost so far as fees are concerned. This is not the place to examine critically the mouth of this gift-horse, but it may be said that there is a very wide and strong feeling that while Mr. Carnegie's munificence is great and his intentions are admirable he has not been well advised as to the direction in which higher education can be most benefited or the means by which it can most advantageously be brought within the reach of able but impecunious youths. It is a pity if munificence on this scale should not be directed into suitable channels—there is so much to be done and so little money for the doing of it.

Glasgow Royal Infirmary.

The reconstruction scheme has taken a further step in advance. The various authorities concerned have managed to come to an agreement and it now only remains for the

public to find the money. It is estimated that the total amount required will be some £250,000, towards which contributions amounting to £80,000 have already been promised. For a time the financial question seemed likely to breed mischief between the infirmary managers and the reconstruction committee. The latter contended that having selected a plan for rebuilding and collected £80,000 their functions had ceased, and that the remaining financial responsibility must rest on the shoulders of the infirmary management, a proposal to which the managers not unnaturally objected. They expressed their consent willingly to the reconstruction of the buildings on the north side with the money already collected, but they declined to permit further interference with the infirmary until the total amount of money needed for the entire reconstruction scheme was raised. To this view the reconstruction committee appear to have become converted and they have now issued an appeal for a further £170,000. Together with the request for money the committee combat at length the various criticisms to which their decisions and proposals have been subjected. The selection of the present site they defend not only on the ground of its proximity to a vast industrial population, but also because the adjoining public square, necropolis, and cathedral afford a guarantee that the site will remain an "open" one permanently, and that no other position will secure this condition unless the infirmary is removed far from the city to a place where the attendance of medical men of the highest standing cannot be commanded. They point out also that the removal of cases of severe injury or accident to a distant spot would be full of danger to the patients. The surroundings of the large London hospitals are instanced in favour of the decision and the committee further quote the opinion of Dr. J. B. Russell, late medical officer of health of the city. Against the comment that the proposed plan adds 60 more beds to a site already overburdened with 600 the committee allow that in the present building some of the wards offer a greatly insufficient cubic space, but they state that the new infirmary will provide for every one of its 660 beds an amount of air-space as ample as the most advanced hospital reformer has ever alleged to be necessary, and that in every ward there will be the fullest through-and-through ventilation in addition to any system of artificial ventilation that may be adopted. The provision of the necessary bed-space is to be obtained by carrying the buildings to a height of six storeys, but this, it is urged, will be an advantage rather than otherwise, and members of the staff will, it is anticipated, compete with each other for the upper floors, an adequate service of lifts being, of course, provided. The plan, it is also explained, secures an arrangement of the buildings so that only the minimum of shadow will be cast by any one block on any other and this is advanced as one of its leading merits. In regard to their selection of a plan other than the one recommended by their professional assessor the committee explain that the plan adopted was not excluded by the assessor from any failure in regard to vital or essential particulars but chiefly from a difference of opinion in regard to the style of architecture and the general elevation, on which matters the committee think that they are quite entitled to follow their own opinion. Detailed reasons are advanced in favour of the plan adopted, the elevation of which, it is stated, will in no wise prejudice the architectural and æsthetic effect of the neighbouring cathedral. Altogether it must be admitted that the committee make out a very fair case, and it is to be hoped that any feelings of irritation which have existed will now be allowed to subside and that all interests will work harmoniously to secure the modern and thorough equipment of an institution which is one of the oldest and most valuable of the medical charities of the city. When the infirmary is rebuilt it will undoubtedly be one the largest and best hospitals in the United Kingdom. There must be a great want of tact and management somewhere if such an institution is not made fully available as a clinical school for the numerous medical students of the University. It is notorious that many of the classes at the Western Infirmary are much overcrowded, yet the wards of the Royal Infirmary find but a scanty contingent of students.

Glasgow University.

The executive committee appointed in January last to deal with the question of providing funds for the better equipment of the University and for meeting the demand for extended laboratory and research facilities have issued a statement describing the immediate requirements in these respects. In the medical faculty it is stated that claims more particularly arise in the departments of materia medica, forensic medicine and public health, and physiology and surgery, and it is proposed to meet these by the erection of new buildings which, together with some minor rearrangements, will cost £50,000. New buildings and apparatus needed in the science faculty are estimated to cost £45,000. The demand for increased accommodation in the faculties of arts and law will, it is anticipated, be met by the removal of the departments just enumerated into new buildings. The teaching staff ought, it is stated, to be reinforced by the foundation of professorships in civil law and in organic chemistry, and by the institution of lectureships on English language, ancient history, philosophy, and electricity. The total sum for which an appeal is made is £150,000. Towards this subscriptions amounting to £38,000 have already been privately intimated. They include a donation of £5000 from Mr. John S. Templeton and a similar sum, "ear-marked" for the physiology department, from an anonymous source per the Right Hon. J. A. Campbell, M.P. The trustees of the late Wm. Houldsworth give £2000, and Mr. Andrew Stewart, LL.D., who recently endowed a chair of Political Economy, £1500. Amongst the donors of subscriptions of £1000 are Lord Rosebery, Lord Kelvin, Sir John Stirling Maxwell, Sir Charles Tennant, Sir James Bell, Sir Charles W. Cayzer, the Right Hon. James A. Campbell, M.P., Mr. J. S. Kennedy, New York, Mr. William Ker, and Mr. James Napier.

Outbreak of Small-pox at Braemar.

About a fortnight ago a fatal case of small-pox occurred in an isolated cottage at Braemar, in the Aberdeenshire Highlands. Since then there have been reported six other cases, three of which are being treated in the same cottage and the remainder (including the lady caretaker) in the local hospital, which is being enlarged to meet the emergency. The outbreak is unfortunate at the commencement of the holiday season, Braemar being a great summer and autumn health resort. All precautions as to vaccination are being taken, and a medical man and selected staff of nurses have been sent from Aberdeen specially to attend to the cases.

Elgin Infectious Diseases Hospital.

The Joint Committee of this hospital having had before them a letter from Dr. Watson, medical officer, as to the work done at the hospital during the year, have fixed the salary at £50 per annum. The charge of five guineas per head per week made for small-pox patients from Burghead was confirmed, it being stated there would be a loss rather than a profit, the total extra expense having amounted to £145, including disinfecting.

Small-pox in Aberdeen.

Professor M. Hay, medical officer of health to the city, reports that the seventh case in the present series (commencing Jan. 1st, 1901) was that of a girl employed at Broadford Works who is now nearly fit to be discharged from the City Hospital. About 300 workers in the same factory have been revaccinated and there has been no spread of the disease. The city local authority have revaccinated the following numbers:—At the Sanitary Office, 874; the Royal Infirmary, 1094; the City Hospital, 122; the Dispensary, 56; Marywell-street School, 290; St Clement-street School, 183; Woodside Police-station, 253; Old Aberdeen Townhouse, 139; Walker-road School, Torry, 192; Torry School, 11; and elsewhere, 330—total, 3544. The number of revaccinations performed privately has been still larger. The extra expense to the rates so far as is yet known is £135 13*s.* 4*d.*, including £44 7*s* 1*d.* for vaccine lymph, and £91 5*s.* to medical men and others for personal services.

May 21st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin Sanitary Association.

THE council of the Dublin Sanitary Association met on May 9th and passed the following resolution:—

That having regard to the very serious epidemic prevalence of acute pneumonia or pneumonic fever in Dublin and its vicinity, and to the proved infective or zymotic origin of this disease, the council are of opinion that the disease should take its proper place among zymotic affections in the periodical returns of the Registrar-General for Ireland.

At the previous meeting of the association a resolution was adopted calling the attention of the Local Government Board for Ireland to the eminently unsatisfactory state in which notification of infectious diseases at present stands in the Dublin registration area and adjoining districts. It transpired that the Notification of Infectious Diseases Act had not yet been adopted in such important urban districts as Kingstown, Blackrock, and Dalkey. Moreover, there is a difference of practice as to the diseases which are notifiable; for instance, measles is not notifiable in Rathmines while it is so in Dublin and Pembroke; whooping-cough is not notifiable in Dublin or Rathmines while it is so in Pembroke. The council expressed an opinion that the time has now come for assimilating the law of notification in Ireland to that in force in England, Scotland, and Wales, where notification is now universally compulsory.

Presentation to Mr. Thomas Myles, P.R.C.S. Irel.

A few intimate professional friends of Mr. Myles, President of the Royal College of Surgeons in Ireland, met some days ago at 33, Merrion-square, Dublin, for the purpose of presenting him with a carriage and an illuminated address as a mark of their appreciation and regard. Sir Charles Cameron occupied the chair and made one of his usual felicitous speeches. Sir F. Criuse, D.L., was called to the second chair, when a vote of thanks was passed to Sir Charles Cameron for kindly presiding on the pleasing occasion.

Small-pox in Belfast.

At a meeting of the Belfast Board of Guardians on May 14th, one of the members stated that a woman admitted to the infirmary with small-pox had come from nursing a child in Glasgow affected with the disease, and that the bedding and furniture were allowed to be brought through the public thoroughfares of the city without let or hindrance. He referred to the matter as showing great laxity on the part of the Public Health Committee.

The Royal Victoria Hospital, Belfast, and the Medical Students.

Some recent appointments to the resident staff of the Royal Victoria Hospital have given rise to considerable adverse criticism on the part of the medical students of the school. The following are the facts. Two intern vacancies were announced to be filled up on May 11th, and for these posts there were three candidates—two old students of the school who had been resident pupils in the hospital and a third, a young medical man, the son of a well-known practitioner in Belfast, who had studied in Dublin. The appointments are made by the board of management and life governors. On the eve of the election a circular was sent, signed by the secretary of the Students' Representative Council and by the secretary of the Belfast Medical Students' Association, asking the board of management to give preference to the candidates trained in Belfast, because they have been trained in the school and have been resident pupils in the hospital. Their qualifications, the circular said, were not inferior to those of any outsider; and to appoint an outsider would cast a slur on the teaching of this school and discourage the students attending it. All three candidates were graduates in medicine; one was a first-class honours man of the Royal University, the second was a pass graduate of the same institution, and the third was a pass graduate of Trinity College, Dublin. At the election the Trinity College man, whose father resides in Belfast, and who in this way had local influence among the life governors, was elected by a large majority, and the other successful man was the first-class honours man of the Royal University and one of the most distinguished men the Belfast Medical School has had for some time. As a result the students, who were most indignant, held a meeting, an account of which was published in the Belfast papers of May 18th, and passed a resolution viewing with regret the action of the staff of the Royal Victoria Hospital in connexion with the recent appointment of resident medical officers. Further, they thought that the hospital staff should have taken up a firmer position in regard to the medical qualifications of candidates. A second resolution was also passed, stating that the Belfast medical students, being dissatisfied with the treatment they received in the Royal Victoria Hospital, directed the medical secretary of the Students' Representative Council to approach the Royal College of Surgeons, Dublin, with a view to the recognition of the Union Infirmary, Belfast, as a teaching hospital.

The Irish Census Returns.

From the returns just issued the population of Ireland is now 4,456,546—a decrease of about 5·3 per cent. In three counties there is an increase—Down, Antrim, and Dublin (the presence of the two cities of Belfast and Dublin give the explanation). There is less decrease in Ulster (2·4 per cent.) than in the other four provinces. Belfast, in population, is now by far the premier city of Ireland, and relatively it has increased in numbers more than any other town in the country. Its inhabitants are now 348,876 instead of 255,950 at the last census (an increase of over 90,000). Dublin has a population now of 286,328 instead of 269,710 last census. These figures show that not only has Belfast a population exceeding that of Dublin, but that while Dublin during the past 10 years has increased by 16,618, Belfast has, during the same period, added 92,926 to its numbers. Of the other cities, Derry has increased since the last census by over 6000, Cork by over 2000, while Limerick and Waterford have diminished.

Nurses in Poor-law Hospitals.

On May 14th at Dublin Castle several boards of guardians appealed under Section 14 of 10 and 11 Victoria, ch. 90, against an order of the Local Government Board for Ireland, dated Feb. 4th, 1901. The question involved was the right of the Local Government Board for Ireland to insist upon the appointment of qualified nurses and attendants in poor-law infirmaries and hospitals.

May 21st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Lumbar Puncture in Uræmic Headache.

AT the meeting of the Société Médicale des Hôpitaux, held on May 3rd, M. Marie and M. Guillain reported an interesting case occurring in a young man suffering from albuminuria with enormous increase of the arterial pressure and complaining of very violent headache which neither analgesics nor milk diet could relieve. Lumbar puncture showed that there was considerable hypertension of the cerebro-spinal fluid, six cubic centimetres of which escaped in a jet. The headache diminished rapidly and disappeared entirely at the end of two hours. The improvement lasted for several days. It might, therefore, be asked whether certain nervous phenomena of uræmia, such as headache, transient amaurosis, &c., might not depend on hypertension of the cerebro-spinal fluid, just as in the case of cerebral tumour. If this be so, the best treatment of uræmic headache would be lumbar puncture. At the same meeting M. Legendre quoted the case of a uræmic patient suffering from headache, insomnia, and myosis, who was similarly relieved at once by lumbar puncture. At the next meeting, held on May 10th, M. Babinski added a strange case to this list of instances of relief of cerebral troubles on the reduction of the intra-spinal pressure. A patient under his care, the subject of cerebral tumour, suffered from headache which disappeared regularly for three days after the menstrual flow.; menstruation, therefore, seemed here to act as a natural blood-letting, so to speak, diminishing the blood-pressure and consequently the pressure of the cerebro-spinal fluid.

The Chair of History of Medicine.

At the Faculty of Paris the chair of History of Medicine is again vacant, its occupant, M. Brissaud, having made an application to exchange to the chair of Internal Pathology which Professor Debove has given up in order to become the successor of M. Potain in the chair of Clinical Medicine. The list of candidates for the chair of History of Medicine submitted by the Faculty gives the first preference to M. Déjerine, and after him to M. Gilbert Ballet. Now M. Déjerine, an eminent neuro-pathologist, makes no secret of his intention if appointed to quit his post whenever an opportunity arises, in order to take the first chair of Internal Pathology which becomes vacant. The council of the faculty is not ignorant of this intention, but it asserts that at least M. Gilbert Ballet, the candidate second in order of preference, who will in due course be M. Déjerine's

successor, has given a formal undertaking never to seek an exchange and to devote himself permanently to the chair of History of Medicine. These combinations and bargainings are criticised with much severity in medical circles. It seems, in fact, that the chair of History of Medicine is no longer the abiding place of a real specialty, and that it has become a sort of waiting-room for specialists in different branches, neuro-pathologists, physicians, and surgeons, who get themselves appointed to it by virtue of personal considerations, and who resign at once whenever they can obtain a chair of the specialty which they cultivate, the consequence being that the appointment to the latter is not made as the result of a genuine contest between specialists in the same subject. It would be much better to prohibit exchange of chairs in different specialties. This chair of History of Medicine was created at the time of the foundation of the new Faculty of Medicine in 1795, and had for its first occupant Jean Goulin of Reims, a real historian, who on his death at the end of four years was succeeded by the celebrated Cabalis. The latter had no successor, the chair being suppressed. In 1869 M. Salmon of Champoteran, a councillor of State, bequeathed to the faculty a sum of 150,000 francs (£6000) for the foundation of a chair of History of Medicine. Daremberg was the first occupant and held the position for two years. His successor, Lorain, likewise died at the end of two years. Then came M. Parrot, who exchanged in 1879 to the clinical chair of Children's Diseases. On his death there was a keen competition between M. Laboulbène and M. Olivier, the latter of whom, a celebrated specialist in children's diseases, probably intended to follow the example of M. Parrot and ultimately to exchange into the chair of Children's Diseases. M. Laboulbène, however, was successful by one vote and lectured conscientiously until his death in 1898. M. Brissaud who succeeded him and has just exchanged into the chair of Internal Pathology will have lectured for exactly a year. These deplorable transactions show to what an extent in the highest medical circles in France merit may be subordinated to personal considerations.

May 20th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

McGill University, Montreal.

A DECIDED change in the matriculation standard of the medical faculty of McGill University will come into effect in September, 1902. The requirements for this examination have been raised all along the line, and hereafter Greek, German, and French will be the only optional subjects at this examination. In addition to this all candidates will be required to show that they are possessed of a sound practical knowledge of chemistry and a thorough acquaintance with theoretical physics, statics, and dynamics. One of the subjects of Greek, German, or French must be taken. The authorities are anxious to make the medical faculty unexcelled by any other similar faculty in the world and towards this end it is proposed still further to increase the matriculation standard in the near future, so that all candidates before matriculating in medicine will be required to show that they have taken the first-year arts course in some recognised university. Not long ago McGill University lengthened its session from six to nine months and a combined arts and medical course was established. By the present changes those students who have been in the habit of pursuing their studies while also engaged in outside employment will have to abandon the latter if they wish to continue at their medical studies.

Death of Two Toronto Physicians.

Two well-known medical men have recently died in Toronto under sad circumstances. Dr. J. Archer Watson was riding on horseback about 10 miles out of the city; a train approached, the horse backed on the track and threw its rider violently against the engine-boiler, and the rapidly running train dashed him across the road against a board fence and instantly killed him. Dr. Watson was 45 years of age. He graduated from Trinity Medical College in 1885.—Dr. Thomas Henry Little, also of Toronto, died on the morning of April 25th from hæmorrhagic small-pox. About 10 days before his death he had been summoned to attend a young man who had recently arrived from Cleveland, Ohio, U.S.A., where small-pox was prevalent. Dr. Little developed the disease in a very virulent form and from this he subsequently died. He was 39 years of age and was a graduate in medicine of Toronto University, having been in practice in Toronto for upwards of 12 years.

The Victoria Asylum for Women.

A new asylum for women, to be called the "Victoria Asylum for Women," is fast nearing completion at the town of Coburg, Ontario. It will be ready for the reception of patients in September. Dr. McNichol of Coburg has been appointed to the position of superintendent and Dr. Harriet Cockburn of Toronto has been appointed assistant physician. This is the first instance in this province of governmental recognition of the claims of female medical practitioners. Since her graduation Dr. Harriet Cockburn has had considerable hospital experience, having been connected for some time with the Dakota State Asylum for the Insane, Dakota, U.S.A. Dr. McNichol has retired from private practice and is at present studying in the various asylums of the province, thus familiarising himself with the work which he will have to perform.

Queen's University, Kingston.

Queen's University, Kingston, Ontario, held its annual exercises for conferring medical degrees on April 10th. On that occasion Dr. Herald, the secretary of the medical faculty, performed the ceremony of presenting the Dean Fowler Scholarship which has lately been founded by the faculty and medical graduates of this institution both in the United States and in Canada. This scholarship will commemorate the lifelong services of Dr. Fife Fowler, late professor of medicine and now honorary dean of the Faculty. Dr. Fowler went to Kingston from Edinburgh in 1854, just at the time when the medical faculty of Queen's University was being founded. He received the appointment of professor of materia medica and this he held until 1878 when he was promoted to the chair of Medicine which he continued to hold up to a year ago. He was appointed dean in 1883. Dr. Fowler, in replying to the presentation, referred to the fact that he alone remained alive at that day of all the founders of the medical faculty of Queen's University.

Small-pox in Ontario.

Only a few weeks ago it was thought that the present outbreak of small-pox in Ontario was showing signs of abating, but since that time there have been created several new centres of infection, notably one on the Indian Reserve along the Grand River in close proximity to the city of Brantford. The Ontario Board of Health recently held its quarterly meeting in Toronto and discussed the small-pox situation, when Dr. Bryce, the provincial health officer, dealt very severely with some physicians who persisted in calling the outbreak "chicken-pox." Dr. Bryce further called upon the Medical Council to discipline these physicians as they were trifling with the health of the community and obstructing and hindering the work of the provincial health officials.

Toronto Clinical Society.

The final meeting of this society for the 1900–1901 session was held on May 1st. Some interesting cases were shown and reported upon by Dr. H. A. Bruce, Dr. F. Le M. Grasett, and Dr. George A. Bingham. The annual elections were held, resulting as follows:—President: Dr. J. F. W. Ross. Vice-President: Dr. E. E. King. Treasurer: Dr. W. H. Pepler. Recording Secretary: Dr. George Elliott. Corresponding Secretary: Dr. A. A. Small. Executive Committee: Dr. H. J. Hamilton, Dr. H. B. Anderson, Dr. W. B. Thistle, Dr. H. A. Bruce, and Dr. G. A. Bingham.

Toronto, May 6th.

Obituary.

WILLIAM JOHNSTONE FYFFE, A.B., M.D. DUB., L.R.C.S. IREL.,

DEPUTY SURGEON-GENERAL ARMY MEDICAL DEPARTMENT (RETIRED).

DR. WILLIAM JOHNSTONE FYFFE died at his residence, 2, Rodney-place, Clifton, on May 17th, in his seventy-sixth year. The deceased, who was born in the north of Ireland, graduated M.D. of Dublin University in 1847, and the same year qualified L.R.C.S. Irel. He then entered the

army as a surgeon and shortly afterwards was stationed at Jamaica with the 3rd West Indian Regiment. A severe epidemic of cholera occurred there during the time, and Dr. Fyffe gained much commendation by the skill and devotion which he displayed. He was afterwards attached to the 5th Dragoon Guards and served during the Crimean war, after which he was for a time assistant professor of medicine at Netley Hospital. He retired from the army with the rank of deputy surgeon-general about 30 years ago and commenced practice at Clifton. He was physician to Clifton College and on the honorary staff of the Clifton Dispensary. Dr. Fyffe was a former president of the Bath and Bristol Branch of the British Medical Association and also of the Bristol Medico-Chirurgical Society. He had retired from practice a few years ago, was held in the highest esteem by his professional *confrères* and by the residents of Bristol and Clifton. He leaves three sons and three daughters, for whom much sympathy is felt.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Eduard Golebiewski of Berlin, a recognised authority on accidental injuries.—Dr. Karl Laufenauer, Professor of Nervous and Mental Diseases in Budapest.—Dr. Ferdinand Albert Heidenreich, an aged practitioner who was an enthusiastic botanist, was murdered in his own house at Tilsit by burglars.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In May the following candidates passed in the subjects indicated:—

Surgery—J. C. Baggs (Section I.), St. Thomas's and Westminster Hospitals; P. A. Chilcott, London Hospital; W. T. Colyer, Cambridge; B. Goltein (Section II.), Vienna; W. O. Greenwood (Sections I. and II.), Leeds; S. K. K. Haslam (Section II.), Royal Free Hospital; J. Kemp (Sections I. and II.), Manchester; J. W. H. Morrison (Sections I. and II.) and R. T. Vaux (Sections I. and II.), Durham; and V. F. Wall (section II.), St. Mary's Hospital.

Medicine.—J. C. Baggs (Sections I. and II.), St. Thomas's and Westminster Hospitals; D. J. Ferris (Sections I. and II.), and W. Garstang (Section II.), Manchester; B. Goltein (Sections I. and II.), Vienna; W. O. Greenwood (Section II.), Leeds; J. I. Halstead (Section II.), Manchester; S. K. K. Haslam (section II.) Royal Free Hospital; C. G. Meade (Sections I. and II.), and M. J. Ryan, St. Bartholomew's Hospital; P. P. Tobit (section I.), King's College Hospital; V. F. Wall (Sections I. and II.), St. Mary's Hospital; and M. J. Williams, St. Bartholomew's Hospital.

Forensic Medicine.—J. C. Baggs, St. Thomas's and Westminster Hospitals; B. Goltein, Vienna; C. A. Lower, Guy's Hospital and Bristol; C. G. Meade, St. Bartholomew's Hospital; and V. F. Wall, St. Mary's Hospital.

Midwifery.—D. J. Ferris, Manchester; C. J. Francis, Guy's Hospital; C. S. Scott, St. Bartholomew's Hospital; P. P. Tobit, King's College Hospital; and M. J. Williams, St. Bartholomew's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery: P. A. Chilcott, D. J. Ferris, B. Goltein, W. O. Greenwood, J. I. Halstead, S. K. K. Haslam, J. Kemp, C. G. Meade, M. J. Ryan, and V. F. Wall.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin*: Dr. H. Liepmann has been recognised as *privat-docent* of Neurology and Mental Diseases.—*Geneva*: Dr. Louis Mégevand has been appointed to the chair of Forensic Medicine in succession to the late Professor Gosse.—*Haile*: Dr. E. Kromayer, *privat-docent* of Dermatology, has been granted the title of Professor.—*Havana*: Dr. Aristides Agramonte has been appointed Professor of Bacteriology and Experimental Pathology.—*Heidelberg*: Dr. O. Simon has been recognised as *privat-docent* of Surgery.—*Kieff*: Dr. Malinovski has been promoted to the Ordinary Professorship of Surgery.—*Königsberg*: Dr. Garré of Rostock has been appointed to the chair of Surgery in succession to Dr. von Eiselsberg.—*Leipsic*: Dr. Müller has been recognised as *privat-docent* of Medicine.—*Leyden*: Dr. Hansemann of Berlin has declined the Professorship of Anatomy which he was offered.—*Munich*: Dr. Haug, *privat-docent* of Otology; Dr. Mollier, *privat docent* of Anatomy; and Dr. Cremer *privat-docent* of Medical Physics, have been promoted to Extraordinary Professorships.—*Paris*: Dr. Déjerine, *agrégé*, has been appointed Professor of the History of Medicine and Surgery in succession to M. Brissaud.—*Prague* (*Bohemian University*): Dr. Stanislaus Ruzicka has been recognised as *privat-docent* of Hygiene, and Dr. Ladislaus Syllaba as *privat-docent* of Medical Pathology and Therapeutics.

ON May 17th the Duchess of Somerset formally opened the new cottage hospital at Totnes.

DR. HENRY WARD IRVINE of Birmingham has been appointed one of His Majesty's Inspectors of Schools.

THE JACOB MEMORIAL.—The first subscription list for this memorial closes on June 20th. The honorary treasurers are Sir Charles Cameron, C.B., and Mr. J. L. H. Ormsby, V.P.R.C.S. Irel., Dublin.

SOCIETY OF MEDICAL PHONOGRAPHERS.—At the society's recent shorthand examination for medical students the first prize (£5) was awarded to Mr. James M. Kirkness of Edinburgh University, and the second (£3) to Mr. Joseph P. Byrne of the Royal College of Surgeons in Ireland.

FREEMASONRY.—*Rahere Lodge, No. 2546*.—An ordinary meeting of this lodge was held at Frascati's Restaurant, Oxford-street, W., on May 14th, W. Bro. Walter Gripper, M.B. Aberd., W.M., being in the chair. Bros. Ware and Beadles were admitted to the Third Degree, while Mr. David Boyd Keown, M.R.C.S. Eng., L.R.C.P. Lond., was initiated into Freemasonry. Grants of ten guineas each were voted for the Boys' School and the School for Girls. W. Bro. Phineas S. Abraham, M.D. Dub., was elected W.M. for the ensuing year, while W. Bro. Clement Godson, M.D. Aberd., was re-elected treasurer. Subsequently a number of the brethren dined together.—*The Middlesex Hospital Lodge, No. 2843*.—The first regular meeting of this lodge was held at the Freemasons' Hall on May 16th, W. Bro. T. G. A. Burns, P.P.G.D. Surrey, W.M., being in the chair. The following brethren were elected as joining members: W. Bro. General the Hon. Herbert F. Eaton, Bro. A. B. Alexander, L.D.S. R.C.S., Bro. A. R. Godrich, Bro. R. A. Young, M.D. Lond., Bro. C. Vincent Cotterell, L.D.S. R.C.S. Irel., Bro. Armstrong Smith, Bro. A. F. Palmer, Bro. J. C. Cresswell, M.R.C.S., and Bro. E. Norton, M.D. The following gentlemen were initiated into Freemasonry: Sidney Coupland, M.D. Lond., Edward A. Fardon, M.R.C.S. Eng., John Murray, F.R.C.S. Eng., and Herbert E. Gunson, M.A.

LIVINGSTONE COLLEGE.—Livingstone College, Leyton, was opened on May 23rd by Mrs. Bruce, the elder daughter of the late traveller who gives his name to the college. Founded in 1893 for the purpose of giving a year's training in the elements of medicine and surgery to missionaries who are likely to be placed in stations far from qualified medical assistance, over 100 students have since its inception passed through the college. A pamphlet with illustrations has been issued in order to enable friends of the college to realise the conditions under which the work is being carried on in the new premises, which are intended to form a memorial in London to the memory of the late Dr. Livingstone. It would have been difficult to find a more suitable building, and it has been readily adapted to its new purpose. It is hoped that the sum of £3500 which is still needed for the purchase of the property may speedily be subscribed, in order that the work of Livingstone College may be carried on without financial difficulty, and become, as it has been in the past, practically self-supporting. Full particulars concerning the college or the Livingstone Memorial Fund may be obtained from the Principal, Dr. C. F. Harford-Battersby, Livingstone College, Knott's Green, Leyton, E.

ROYAL METEOROLOGICAL SOCIETY.—The monthly meeting of this society was held on May 15th at the society's rooms, 70, Victoria-street, Westminster, S.W., Mr. W. H. Dines, B.A., the President, being in the chair. Mr. Rupert T. Smith read a paper on the Periodicity of Cyclonic Winds, which was the result of a discussion of his own observations made in the neighbourhood of Birmingham during the 26 years 1874–99. The equinoxes did not appear to be very stormy periods, but from the author's tables it was shown that the greatest frequency and force of cyclonic wind occurred some two weeks before the spring equinox and some three weeks after the autumn equinox. Mr. W. Marriott gave an account of the bequest by the late Mr. G. J. Symons, F.R.S., to the Royal Meteorological Society. Mr. Symons (who died on March 10th last year) was the founder of the British Rainfall Organisation and was a most distinguished meteorologist. He took a great interest in the welfare of the

society and he held the office of secretary for a period of 25 years and was twice elected President. By his will Mr. Symons bequeathed to the society his Cross of the Legion of Honour, the gold Albert Medal awarded to him by the Society of Arts, the testimonial album presented to him in 1879 by the Fellows of the Royal Meteorological Society, and the sum of £200, as well as such of his books, pamphlets, maps, and photographs of which there was no copy in the society's library. Mr. Marriott stated that from Mr. Symons's valuable collection he had selected for the society over 5000 books and pamphlets and about 900 photographs. A large number of the books were old and rare works, 750 bearing dates previous to 1800, while eight were as early as the fifteenth century. By this noble bequest the Royal Meteorological Society now possesses the most complete and extensive meteorological library in existence.

THE COLONIAL NURSING ASSOCIATION.—The fifth annual report for the year ending April 30th, 1901, of the executive committee of the Colonial Nursing Association has just been issued. The association, which was established in 1897 for the purpose of providing trained nurses in the Crown colonies and small English communities in foreign countries, has 67 nurses now at work, of whom 46 are employed in Government hospitals and 21 as private nurses, against a total of 56 last year, 34 being Government and 22 private nurses. The only new branch started this year was one in Costa Rica. The chief feature of the year under notice was the great increase in the staff of nurses employed by the Government on the West Coast of Africa. Eight fresh nurses were supplied to Nigeria, and Old Calabar also applied for a second nurse to supplement the one previously sent out. Two extra nurses were also selected for the hospital at Singapore, bringing the staff there up to eight. Hitherto all Government appointments have been made at the request of the Colonial Office; but the Foreign Office has now made use of the organisation of the association to supply two nurses for work in Zomba, British Central Africa. In consequence of the many calls on the public purse during the past year it was felt that it would be impossible to raise the balance still required to make up the £5000 invested capital originally asked for by Mrs. Chamberlain. It is hoped that this year the remainder of this sum may be subscribed in order to set the association on a perfectly sound financial basis. In connexion with the association it has been proposed to start a sick pay fund to provide temporary financial assistance to any nurse who may become incapacitated during her connexion with the association. In order to raise the nucleus of such a fund it is proposed to hold a ball during the present year.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Habitual Drunkards.

THE Government has adopted the Bill of the Bishop of Winchester dealing with the subject of habitual drunkards and since the adoption took place the measure has been very much altered in the House of Lords. In its present state the Bill makes it an offence for a convicted habitual drunkard to ask for drink in licensed premises and for the licensee to supply him, enables the husband of a woman who is an habitual drunkard to get an order equivalent to a judicial separation on the ground of cruelty, and provides a special penalty for a person found drunk while in charge of a child under seven years of age.

HOUSE OF COMMONS.

THURSDAY, MAY 16TH.

Uncertified Deaths in Inverness-shire.

Mr. JOHN DEWAR asked the Lord Advocate (1) whether the Secretary for Scotland was aware that the medical officer of health of Inverness-shire in his report recently issued called special attention to the fact that during the last 10 years there had been as many as 3987 uncertified deaths in the county; and that during last year 80 deaths were registered in the parish of Duirinish, of which 51 were uncertified by a medical attendant, that in Kilmuir 47 deaths were registered, of which 33 were uncertified, and that in South Uist, of 95 deaths registered, 57 were uncertified, and that taking the entire county, nearly 400 persons were buried during the year whose deaths had not been certified by a member of the medical profession; and (2) whether in view of these facts, the Secretary for Scotland would introduce legislation on the subject as soon as opportunity offered in order to remedy these conditions.—The LORD ADVOCATE replied that the answer to the first paragraph was in the affirmative. As he had already stated a medical certificate of death was not a necessary condition of burial in any part of Scotland, and the Government were not at present prepared to legislate on the subject.

The Manipulation of Butter.

Mr. HANBURY, in reply to questions on this subject, said that the Board of Agriculture had official knowledge of one factory in Finsbury in which butter was mixed with milk by a mechanical process and the Board were following up information supplied to them as to the existence of others. The Finsbury firm had a very large number of depôts scattered over the country and the quantity sold was presumably large. He had no power to send an inspector into such a factory, though one was admitted into the Finsbury factory on sufferance. Nor had he power to stop the sale of butter so manipulated. But the Board had been acting in concert with various local authorities to have the legality of the sale of butter so treated tested in a court of law. A conviction was recorded against the Finsbury company last Wednesday at Longton against which the defendants had given notice of appeal. There were three prosecutions pending. The whole question pointed to the necessity for fixing a standard of butter, which he hoped to be able to do without any avoidable delay.

Plague in South Africa.

Mr. CHAMBERLAIN stated in reply to a question that there was an isolated imported case of bubonic plague at Durban in May of last year, since when no further cases had been reported. The governor of St. Helena, on the recommendation of the Medical Board there, had issued an Order in Council that no person or cargo coming from ports in South Africa south of 25° south latitude should be allowed to land. The question whether this Order in Council must not be modified was under consideration and that of landing troops from Durban could not be settled until this point was decided. It appeared to him that the fears of the local authorities were somewhat exaggerated.

FRIDAY, MAY 17TH.

The Butter Question.

Mr. O'SHAUGHNESSY asked the President of the Board of Agriculture whether he would explain why the Board of Agriculture had not yet fixed the standard of water in butter, which they had been empowered to do by legislation.—Mr. HANBURY replied: The power of fixing what is somewhat inaccurately described as a standard of milk and butter was first given to the Board in January of last year. It was then decided that a committee should first inquire into the question of milk, and that committee was appointed on Jan. 29th, 1900, and reported in January of this year. We are now working in concert with the Irish Department in preparing the necessary evidence to submit to a committee dealing with butter.

Lead-Poisoning.

Sir CHARLES DILKE asked the Home Secretary whether the increase in the more serious forms of lead-poisoning and decrease in the less serious shown by the return on lead-poisoning could be accounted for by any reasons which could be stated to the House in reply to a question.—Mr. RITCHIE replied: I cannot accept without qualification the hon. baronet's statement that the more serious cases of lead-poisoning have increased. The most serious cases, the fatal ones, have, as appears from the return, been reduced by one-half from 16 in 1899 to eight in 1900. In the current year up to the present only two deaths have been reported. With regard to other serious cases there was an increase among males and a decrease among females of cases of paralysis and a decrease among males and an increase among females of cases presenting brain symptoms. These are the accidental fluctuations which will always occur in dealing with small numbers. The truth seems to be that owing to the greater precautions now adopted there has been a general decrease of lead-poisoning, which in the more serious cases is qualified to some extent by the effects of conditions extending back to former years.

The Reform of the Army Medical Service.

Sir JOHN TUKE asked the Secretary of State for War whether he proposed to adopt the suggestion contained in the report of the Royal Commission appointed to consider and report upon the care and treatment of the sick and wounded during the South African campaign to appoint a departmental or other committee of experts to inquire into and report upon the steps needed to effect certain reforms in the Royal Army Medical Corps, and, if so, whether he was prepared to state the composition of such committee.—Lord STANLEY replied: The Secretary of State is preparing various proposals to submit to a committee of experts, but the composition of the committee cannot at present be stated.

MONDAY, MAY 20TH.

The Workhouse Nursing Question in Ireland.

Mr. J. P. FARRELL asked the Chief Secretary to the Lord Lieutenant of Ireland would he explain on what grounds the Local Government Board had required the medical officer of Granard Union to employ a trained nurse at £1 11s. 6d. a week to nurse a baby whom he found in charge of a pauper inmate; was he aware that the nurse in question refused to live in the workhouse and took a room in the principal hotel in Granard; and could he state when such orders of the Local Government Board would be withdrawn.—Mr. WYNDHAM replied: The Local Government Board did not require the medical officer to employ a nurse at the remuneration stated. The master was directed by the medical officer to procure a nurse for a sick child whom he found in charge of a pauper inmate. There is no apartment available for the nurse in the workhouse and she has obtained temporary accommodation in a hotel outside. I am making further inquiry in the matter.

The Royal Army Medical Corps.

Sir JOHN TUKE asked the Secretary of State for War whether he would undertake that the report of the committee to be appointed to consider the reconstruction and organisation of the Royal Army Medical Corps would be in the hands of Members before the Army Medical Vote came up for discussion.—Mr. BRODRICK replied: It is impossible for me to give any pledge as to the time that such a committee as that proposed may think it proper to give to its duties.

Deaths from Eating Ice-cream.

Mr. T. R. DEWAR asked the President of the Local Government Board whether he was aware that at an inquest held at Hackney on May 2nd on a boy who died from ptomaine poisoning the coroner remarked that the ice-cream purchased at street barrows had caused several deaths in London and that the symptoms had been the same in this case; and in view of the large sale of such articles in East London would he say whether the inspectors took any steps to secure the occasional analysis of eatables of this description when hawked in the streets.—Mr. HANBURY, answering on behalf of Mr. LONG, said that the latter had seen a newspaper report of the inquest referred to. The London County Council some time since caused special inquiry to be made into the conditions under which ice-cream was prepared and sold and analyses of samples of this article had from time to time been made by the sanitary authorities of London. He was not, however, able to state whether recent action had been taken on the subject.

TUESDAY, MAY 21ST.

Fees of Medical Men at Irish Inquests.

Mr. FIELD asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state the Local Government Board scale of fees for medical men attending inquests; whether Dr. Synnott only received one guinea for attending several days at two inquiries regarding the Dodder mystery case; and whether he would cause the matter to be reconsidered.—Mr. WYNDHAM replied that he was informed that the fee paid to this gentleman was one guinea. The amount of the fee payable in such cases was regulated by the Coroners' Act, 9 and 10 Victoria, cap. 37, which expressly charged it to local rates, and any alteration in the scale of fees could only be effected by legislation.

ROYAL COMMISSION ON ARSENICAL POISONING.

MONDAY, MAY 13TH.

THE Commission held another meeting to-day in the Westminster Palace Hotel.

Mr. HUGH BAIRD, maltster, Glasgow, gave evidence as to the methods of the large maltsters in Scotland. In the case of his own business, he said that they used as fuel only anthracite coal carefully selected for its purity, and while the floor of each kiln was brushed every time that the grain was removed the beams and plates were brushed once a week or oftener if required. They had tried pneumatic malting, but it had not proved successful for brewer's malt. The difficulty they experienced with this system was to get the moisture thoroughly out of the malt. Kilns were used in Germany in which the malt was dried without being exposed to the actual fire, but the processes of brewing were different in Germany from what they were in this country, and he did not believe that Scottish beer could be made without the malt being exposed, as at present, to the fire. Unless the fumes passed through the malt the desired flavour in the beer could not be secured. He could not believe that hot air would have the same effect as hot fumes. Once they had used peat for fuel and the kiln was so impregnated with it that it could not be used again and was in consequence taken down. They had made no change in their methods of malting since the arsenical scare. Their malts had, however, been tested by several chemists and all the samples were found to be free from arsenic except one. The exception was reported upon by one chemist as containing the three hundred and fiftieth part of a grain of arsenic per pound of malt, but two other chemists reported the same malt as arsenic free. The fuel which they used was regularly tested for arsenic and for the last five months or so they had given guarantees of purity with their malts. They made a large quantity of malt with foreign grain to meet the requirements of the brewers who said that the addition of this malt brightened the appearance of the beer. In the distilleries in the north and west of Scotland the rule was to use home grain only, but in the south foreign grain was not uncommon. Turning again to the question of avoiding exposure to the fumes of the fuel witness said that there was the process of drying malt and the process of curing it, and he believed that it would be found impossible to cure malt in any inclosed cylinders. At the same time he felt sure that the maltsters of Scotland would be glad to improve their methods if means of improvement could be shown them.

THE INVESTIGATIONS AT THE GOVERNMENT LABORATORY.

Mr. ROBERT GRANT HOOPER, analyst in the Government Laboratory, was the next witness, and in the course of his examination he said that the question of the presence of arsenic in beer and brewing materials first presented itself officially at the Government laboratory in the beginning of December last, when, in consequence of the discovery of arsenic in certain beers brewed in Lancashire, applications were made to the Board of Inland Revenue to permit the destruction of the contaminated liquor in the presence of Excise officials with a view to the repayment of the duty which had been charged upon it. Samples of such beer were then forwarded to the Government laboratory and continued to be received for some time. In all 748 samples had been lodged, representing 28,264 barrels, the produce of 67 brewers scattered throughout 11 counties, but mainly in Lancashire, Staffordshire, and Yorkshire. It could not, however, be asserted that this comprised the produce of every brewer who might have used arsenicated materials, as some were known to have destroyed their beer immediately that they became aware that it was contaminated and without lodging applications for the repayment of duty. An examination of the brewers' entries of the materials used in the particular brewings, together with a determination of the exact original gravity and a qualitative examination of the beer for arsenic would have sufficed to substantiate the claim for drawback, but with a view of affording information to this commission it was decided to make a more detailed examination in order to obtain some precise knowledge as to the extent to which the beer had been contaminated. In all 143 quantitative determinations of the arsenic in these beers had been made. From the tables of results which he handed in it would be seen that the proportion of arsenic found varied from less than five-hundredths of a grain up to half a grain per gallon in something like three-fourths of the whole number of cases, but that as regards the remaining fourth the quantity of arsenic ranged from half a grain to about one and three-quarter grains, with one exceptional case of three grains to the gallon. In all but 18 instances Bostock's sugar wholly or in part had been used either in the production of the beer or in priming. In eight out of the 12 cases where sugar obtained from Bostock directly had not been employed, it was stated that the sugar though supplied by another firm had been manufactured by Bostock; in two instances it was found that the arsenic was due to the use of yeast or of yeast pressings from contaminated beer; in one instance the brewer stated that Bostock's sugar was in stock at the time and might have been used by accident; and in the remaining seven cases it was alleged that the arsenical contamination had been traced to the malt used. As regards the period over which the arsenical contamination extended, the oldest sample examined was brewed on May 24th, 1900. Beer at the present time was consumed very shortly after it was produced and consequently whilst there were many samples representing the November production—the date at which the contamination was detected—considerably fewer samples of beer produced at earlier dates were available. It might, however, be noted that in the one May sample the proportion of arsenious oxide per gallon was 0·12 grain; the two brewed in June contained 0·16 and 0·19 grain respectively; the three July samples all showed higher proportions of arsenic, and in one case exceeded half a grain to the gallon; in August the average of six samples was 0·45 grain per gallon and one sample contained 0·65 grain; in September the average was slightly lower (0·33 grain), but one sample contained rather more than one grain of arsenious oxide per gallon; in the October beers the average was half a grain per gallon, and of the 21 samples eight contained more than this, two from different breweries containing as much as 1·47 and 1·28 grains per gallon respectively, though it should, perhaps, be pointed out that these were in both cases strong beers. As regards the November samples, the average was 0·42 grain of arsenious oxide per gallon, but there were seven samples in which the contamination exceeded one grain, and in one exceptional case the proportion rose to three grains per gallon. Sugar was used in varying proportions. The highest proportions of sugar to malt and grain used were 50 and 47 per cent. respectively of the total brewing materials, and in neither case did the arsenious oxide exceed 0·60 grain per gallon, but such proportions of sugar were exceptional. The lowest proportions of sugar were less than 1 per cent., and in two out of three of these the arsenic found in the beer was 0·05 grain of arsenious oxide per gallon, though in the third case it amounted to 0·22 grain per gallon. The average proportion of sugar used in the production of these beers was 2 per cent., and in the two beers showing the highest degree of contamination the proportions were 16 and 18 per cent. respectively. In many cases, however, the sugar employed was obtained from more than one firm, and no evidence had been obtained at the Government laboratory that the brewing sugars generally in use during the past year were contaminated with arsenic. Among the samples sent for examination in connexion with the arsenicated beers were three unfermented sugar solutions which were found to contain arsenic equal to 7·99, 8·14, and 2·63 grains of arsenious oxide per gallon. These were priming solutions prepared on Nov. 23rd, 28th, and 24th respectively, the first two from invert sugar and "fluid" sugar respectively, both manufactured by Bostock, and the third from equal quantities of Bostock's invert sugar and of caramel from a maker whose name could not be ascertained. Three samples of invert sugar and one of solid glucose, all stated to be of Bostock's manufacture, were also sent for examination. The invert sugars were found to contain arsenic equal to 2·04, 1·83, and 1·67 grains of arsenious oxide per pound respectively, whilst the quantity in the solid glucose was 1·99 grains per pound. On the discovery of the arsenical contamination of beer, all the brewing materials in store or under examination at the Government laboratory were put aside to be tested for arsenic, and 104 samples of sugar with 48 samples of malt had since been examined. The sugars included samples taken at breweries in each of the months from June to November and the total was made up of 64 glucoses and 40 invert and priming sugars. Of these, six samples of glucose and two invert sugars were found to contain arsenic. 14 samples of glucose and six of invert sugar taken from breweries during March of the present year were all found to be free from arsenic. Of 47 samples of malt taken from breweries during the months from June to November of last year all but six afforded evidence of the presence of arsenic, but the highest proportion was only 0·05 grain of arsenious oxide per pound of malt. In 22 samples the arsenious oxide per pound of malt lay between 0·05 and 0·02 grain, and in 19 cases whilst still showing traces the quantity was less than 0·02 grain per pound of malt. Of the malt samples received during the month of March of the present year three contained from 0·05 to 0·02 grain, five contained traces amounting to less than 0·02 grain per pound, and one only was quite free from arsenic. In view of the possibility that brewing sugars prepared or treated with sulphuric acid might contain selenium, it was felt to be necessary to search for this substance. The samples of solid sugar and of prepared sugar solutions which had been used in the preparation of beers proved to be arsenicated were first examined. These samples had been received directly from the breweries and in no case was any selenium found to be present. Other arsenicated samples were examined and found to be free from this substance. Finally, a selection of the non-arsenicated sugars forwarded for examination from various parts of the country between June and March last were tested for selenium, but in these samples also no selenium could be detected. When traces of selenious acid were added to glucose or invert sugar the presence of selenium was readily demonstrated. To render the investigation still more thorough samples of imported brewing sugars were examined. 177 samples in all were received, consisting of solid and liquid glucose, caramel, and syrups described as molasses. These samples were received from the United States, Germany, Belgium, Holland, and Canada. With two exceptions all were found to be free from arsenic. The two samples in which evidence of arsenic was obtained consisted of liquid glucose imported at London and Hull respectively, in both cases from Stettin. The amount of arsenic was

small; it was being quantitatively determined, but it appeared not to exceed one-tenth of a grain per pound in both sugars. All samples of beer supplied under Government contracts which had been submitted for analysis since December last had been examined for arsenic; 46 samples of this class had been received and 45 of them were found to be free from arsenic, whilst one War Office sample contained about one-hundredth of a grain of arsenious oxide per gallon and was so reported.

After the examination of Mr. Hooper the Commission adjourned.

TUESDAY, MAY 21ST.

The Commission held another meeting to-day in the Westminster Palace Hotel, with Lord KELVIN in the chair.

Mr. OTTO HEHNER, Past President of the Society of Public Analysts and Chairman of the London Section of the Society of Chemical Industry, was the only witness examined, and in the course of his evidence he said that he had given considerable attention to the question of arsenic in ingredients of food and in commercial products. He had found that very minute traces of arsenic were contained in almost all samples of malt and beer which he had examined, and that at present it was practically impossible to manufacture beer quite free from arsenic. He had found minute traces of arsenic in some kinds of sugar and in molasses and varying quantities in sodium and potassium carbonates, in caustic soda, sulphurous acid, sulphites, borax, oxide of iron, &c., all articles which were used in food materials. Absolute freedom from arsenic was impossible in any brewed beverage; therefore, he said, a maximum limit should be laid down along with an analytical process of determination. In the case of beer and beer ingredients a committee of the Society of Chemical Industry was now engaged in making comparisons of the various tests to detect and approximately to determine minute quantities of arsenic. Under the present system of malting, where the coal fumes come into contact with the grain, the most careful selection of the fuel would not totally exclude contamination. Most of the maltsters now were very careful in regard to their processes, but they were not so prior to the arsenical scare. In his opinion good beer could be made from good materials and yet traces of arsenic might be found in it. In these circumstances he did not see how it was possible to guarantee absolute freedom. He had received samples of what was called pure sulphuric acid, and on analysing them personally he had found traces of arsenic. He had examined two foreign beers and found them perfectly free. In the case of oxide of iron which was met with in the colouring of confectionery, the amount of arsenic was sometimes appalling. The oxide of iron gave a red or plum colour. He had never found arsenic in the samples of bloater-paste sent to him. When he found oxide of iron in the colouring of confectionery he had done what he could to stop its use. He had examined golden syrup for glucose for some years past and there had been many prosecutions in this connexion, but with regard to sweets, practically none were made with glucose. There had been proceedings against the sellers of jam containing glucose. Reverting to beer, Mr. Hehner said that the largest proportion of arsenic which he had found was 1·05 grains per gallon. Almost every day he found traces of arsenic in beer. Arsenic was a curious poison. He had examined a highly contaminated sample, left it, and then returned to find that all trace of the arsenic had vanished. With regard to sulphuric acid, he suggested that all of it brought into commerce should be de-arsenicated, unless notice to the contrary were given by the vendor.

The Commission will not meet again for some time for the taking of evidence.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, Bedford-street, Strand, London.

The Physiological Action of Drugs: an Introduction to Practical Pharmacology. By M. S. Pembery, M.A., M.D., and C. D. F. Phillips, M.D., LL.D. Price 4s. 6d.

BAILLIÈRE, TINDALL, AND COX, Henrietta-street, Strand, London.

Dental Surgery. By Henry Sewill, M.R.C.S., &c. Edited by W. J. England, L.D.S. Eng., and J. S. Sewill, L.R.C.P., L.D.S. Eng. Price 10s. 6d.

Aphorisms, Definitions, Reflections, and Parodoxes, Medical, Surgical, and Dietetic. By A. Rabagliati, M.A., M.D., F.R.C.S. Price 7s. 6d.

Clinical Lectures on Stricture of the Urethra and Enlargement of the Prostate. By P. J. Freyer, M.D., M.D., &c. Price 5s.

Cerebral Science: Studies in Anatomical Psychology. By Wallace Wood, M.D. Price 3s. 6d.

BELL AND SONS, London and New York.

Memory: an Inductive Study. By F. W. Colegrove, Ph.D., D.D. Price 6s.

BLAKISTON'S SON AND CO., Philadelphia.

Select Methods of Food Analysis. By Henry Leffmann, A.M., M.D., and William Beam, A.M., M.D. Price 10s.

BURNS AND OATES, Orchard-street, London.

Intemperance: Natural Remedies. By Professor Campbell. Price 1s.

CHATTO AND WINDUS, London.

The Church of Humanity. By David Christie Murray. Price 6s.

CHURCHILL, J. AND A., Great Marlborough-street, London.

Selected Researches in Pathology. By A. G. Auld, M.D., &c. Price 6s.

Diseases of the Thyroid Gland and their Surgical Treatment. By James Berry, B.S. Lond. F.R.C.S. Price 14s.

On Human Nature as an Excuse for Sin. By Maurice C. Hime, LL.D. Price 1s.

FISCHER, GUSTAV, Jena.

Allgemeine Pathologie. By Dr. Ernst Ziegler. Price 12 marks.

Kurzes Lehrbuch der Gynäkologie. By Dr. Ernst Bumm, Dr. Carl Gebhard, Dr. Albert Doederlein, Dr. Alfons von Rosthorn. Edited by Dr. Otto Küstner. Price 6 marks.

Studien über den Echinococcus Alveolaris sive Multilocularis. By N. Melnikow-Raswedenkow. Price 16 marks.

Topographic Atlas of Medico-Surgical Diagnosis. By Dr. E. Ponfick. Price 12 marks.

ICE AND COLD STORAGE PUBLISHING CO., Farringdon-street, London.

Public Abattoirs and Cattle-markets. From the German of Oscar Schwarz, M.D. Edited by G. T. Harrap and L. M. Douglas. Price 10s. 6d.

KARGER, S., Karlstrasse, Berlin.

Atlas der Krankheiten der Nase. By Dr. P. H. Gerber. Price 6 marks.

LAUPP, H., Tübingen.

Verbandtechnik. By Dr. F. Hofmeister. Price 3 marks.

LEHMANN, J. F., München.

Atlas der ausseren Erkrankungen des Auges nebst Grundriss ihrer Pathologie und Therapie. By Prof. O. Haab. Price 10 marks.

Atlas und Grundriss der Ohrenheilkunde. By Dr. Gustav Brühl. Price 12 marks.

LEWIS, H. K., Gower-street, London.

The Extra Pharmacopœia. By William Martindale, F.L.S., F.C.S., and W. Wynn Westcott, M.B., D.P.H. Tenth edition. Price 10s. 6d.

LIPPINCOTT COMPANY, London and Philadelphia.

Photographic Atlas of the Diseases of the Skin. By G. H. Fox, A.M., M.D. Parts V. and VI. Price not stated.

LIVINGSTONE, E. AND S., Edinburgh.

Botany. Part I. "Catechism Series." Price 1s.

MARSHALL AND SON, Temple-avenue, London.

Advice to Twentieth Century Business Juniors. By Phi. Rho. Chi. Price 4d.

MEDICAL PUBLISHING COMPANY, Bartholomew-close, London.

Clinical Lectures on the Various Forms of Intra-abdominal Suppuration. By A. H. Tubby, M.S., F.R.C.S. Price 3s. 6d.

MOTOR-CAR COMPANY, Shaftesbury-avenue, London.

The Motor-car Manual. By R. Moffat Ford. Third edition. Price 2s. 6d.

OTTO SCHULZE AND CO., Edinburgh.

A Study of the Diet of the Labouring Classes in Edinburgh. By D. N. Paton, M.D., J. C. Dunlop, M.D., and R. M. Inglis, L.R.C.P. Edin. Price not stated.

PENTLAND, YOUNG J., London and Edinburgh.

Text-book of Medicine. Edited by George Alexander Gibson, M.D., F.R.C.P., &c. In two vols. Price 25s.

PUTNAM'S SONS, London and New York.

Eczema, with an Analysis of 3000 Cases of the Disease. By L. Duncan Bulkley, A.M., M.D. Price 5s.

SAUNDERS AND CO., London and Philadelphia.

Atlas of the Nervous System. By Dr. Christfried Jakob. Edited by Edward D. Fisher, M.D. Price 15s.

SCIENTIFIC PRESS, Southampton-street, Strand, London.

Burdett's Official Nursing Directory, 1901. By Sir Henry Burdett, K.C.B. Price 3s.

SELL, HENRY, Fleet-street, London.

Sell's Dictionary of the World's Press, 1901. Price 7s. 6d.

SMITH, ELDER AND CO., Waterloo-place, London.

Modern Cremation. By Sir H. Thompson, Bart, F.R.C.S., M.B., &c. Fourth edition. Price 2s.

SPOTTISWOODE AND CO., Grasechurch-street, London.

The British Pharmacopœia, 1898, with the Indian and Colonial Addendum, 1900. Price 13s. 6d.

STOCK, ELLIOT, Paternoster-row, London.

Victoria Vale. Miscellaneous Pages for the Passing Epoch. Price 6d.

SWAN SONNENSCHEIN AND CO., London.

The Training of the Body for Games, Athletics, Gymnastics, and other Forms of Exercise, and for Health, Growth, and Development. By F. A. Schmidt, M.D., and Eustace H. Miles, M.A. Price 7s. 6d.

UNWIN, T. FISHER, Paternoster-square, London.

The Letters of Her Mother to Elizabeth. Price 2s.

WILLIAMS AND NORGATE, Henrietta-street, Covent-garden, London.

Beiträge zur Pathologie des Knochenwachsthums. By Dr. W. Stoeltzner and Dr. R. Salge. Price 12s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BAMFORD, T., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for Uttoxeter.

BOSTOCK, A. S., M.R.C.S., has been re-appointed Medical Officer of Health, Westhampnett Rural Sanitary District.

CAMPBELL, P. E., M.B., C.M. Edin., has been appointed Medical Superintendent at the Metropolitan District Asylum, Caterham, Surrey, vice G. S. Elliot.

EMRYS-JONES, A., M.D. Edin., M.R.C.S., has been appointed Honorary Consulting Ophthalmic Surgeon to the Bolton Infirmary.

EVANS, FREDERICK HUDSON, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Superintendent at the Mendip Hills Sanatorium for Consumption, Hill Grove, Wells, Somerset, vice Charles Joseph Whitby, resigned.

GARDNER, A., M.B., C.M. Edin., has been re-appointed Medical Officer of Health by the Kirby Moorside Rural District Council.

GRAY, WALTER GORDON, M.R.C.S., L.R.C.P. & L.M. Edin., has been re-appointed Medical Officer of Health by the Holsworthy (Devon) Urban District Council.

HAMILTON, W. M., M.D., M.Ch., Irel., has been appointed Medical Officer of Health, Borough of Eccles.

HARRIS, JOHN HENRY, M.R.C.S., L.S.A., D.P.H. Camb., has been re-appointed Medical Officer of Health for Dartmouth (Devon).

HOGARTH, R. G., F.R.C.S. Eng., has been appointed Assistant Surgeon to the General Hospital, Nottingham.

HOGG, J. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health, Shardlow Rural Sanitary District.

HORTON, THOMAS, M.D., B.S. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Physician to the Torbay Hospital, Torquay, vice A. E. Watson, deceased.

HUNTER, WILLIAM, M.D. Edin., F.R.C.P. Lond., has been appointed Examiner in Medicine (Systematic and Clinical) in the University of Glasgow.

KELLY, C., M.D. Lond., L.R.C.P., M.R.C.S., has been re-appointed Medical Officer of Health, West Sussex Combined Sanitary District.

LYON, GEORGE, M.B., Ch.B. Edin., has been appointed a Clinical Tutor, Royal Infirmary, Edinburgh.

PERCIVAL, G. H., M.B., M.R.C.S., has been re-appointed Medical Officer by the Northampton Rural District Council.

PRINGLE, A. M. N., M.B., C.M. Edin., D.P.H. Camb., has been appointed Medical Officer of Health, Port of Manchester.

STEVEN, J. L., M.D. Glasg., F.F.P.S. Glasg., has been appointed Lecturer-Examiner for Degrees in Medicine, University of Glasgow.

TAYLOR, HENRY J., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Bolton Infirmary and Dispensary, vice A. Emrys-Jones, resigned.

WOOD, ARTHUR GEORGE, M.R.C.S., L.R.C.P. Edin., has been appointed Public Vaccinator for Box by the Chippenham Board of Guardians.

WOOD, M. A., F.R.C.S. Eng., L.R.C.P. Lond., has been re-appointed Medical Officer of Health for the Urban District of Ledbury.

YOUNG, W. B., M.B., C.M. Edin., has been appointed Medical Officer of Health, Poor-law Medical Officer, and Vaccinator for Applecross Division of Western Ross-shire.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD UNION.—Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES, John Bright-street, Birmingham.—Clinical Assistant.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with an allowance of £30 per annum for cab hire, and furnished rooms, fire, lights, and attendance.

BIRMINGHAM PROVIDENT DISPENSARY, Hockley Branch (Sands Cox Trust).—Medical Officer. Salary according to the number of members, with a guaranteed minimum of £250 per annum and residence (unfurnished).

BRADFORD POOR-LAW UNION.—Junior Resident Assistant Medical Officer. Salary £100, with rations, apartments, and washing.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £50, with board and lodgings.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £150 for the first year and £170 for the second, with furnished rooms, coal, and gas.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Three Registrars and One Assistant Anæsthetist.

CITY OF LEEDS.—Assistant Medical Officer of Health and Chief Inspector of Nuisances. Salary £300 per annum.

CITY POORHOUSE AND HOSPITAL, Parliamentary-road, Glasgow.—Assistant Medical Officer. Salary £90 per annum, with board and apartments, &c.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer, unmarried. Salary £150, increasing to £250, with apartments, board, washing, and attendance.

COUNTY BOROUGH OF HUDDERSFIELD.—Medical Officer of Health. Salary £400 per annum, with actual disbursements.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DORSET COUNTY HOSPITAL, Dorchester.—House Surgeon, unmarried. Salary £100, with food and residence.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £25 per annum, with board and washing.

GLAMORGAN COUNTY ASYLUM, Bridgend.—Assistant Medical Officer. Salary £175, with board, lodging, and washing.

GOLD COAST.—Government Medical Officers, unmarried. Salary £400 a year, free passages, and allowances.

GRAHAMSTOWN ASYLUM AND CHRONIC SICK HOSPITAL, South Africa.—Assistant Medical Officer. Salary £250 per annum, with board and quarters. Free passage.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £60, with board and lodging.

INFECTIOUS DISEASES HOSPITALS, City of Leeds.—Assistant Resident Medical Officer. Salary £130 a year, increasing to £150, with board, lodging, and washing.

JARROW MEMORIAL HOSPITAL.—House Surgeon, unmarried.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 a year, with board and lodging.

KINGSTON UNION INFIRMARIES.—Resident Assistant Medical Officer. Salary £150, rising to £200, with house partly furnished, coals, gas, laundry, and scale allowances for rations.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer. Salary £100 per annum, with board, apartments, and washing.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer, unmarried. Salary £150 per annum, with board and residence.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer. Also Assistant Resident Medical Officer, each for six months. Salary at the rate of £50 per annum, with board, residence, and washing.

NORTH-WESTERN FEVER-HOSPITAL, Lawn-road, Hampstead.—A Locum Tenens. Salary at the rate of £160 per annum, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary £200 per annum, increasing by £15 every year. Also two Assistant Resident Surgeons. Salaries £160 per annum each, increasing by £10 every year, furnished apartments, attendance, light, and fuel. Unmarried.

PARISH OF ST. LEONARD, SHOREDITCH.—Second Assistant Medical Officer. Salary £100 per annum, with rations, washing, and furnished apartments at the Infirmary.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, &c.

ROYAL BERKS HOSPITAL.—House Surgeon. Salary £60 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £50 per annum, with board, lodging, and washing.

ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100, increasing by £10 a year, with board and apartments.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Junior Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, lodging, and washing.

ROYAL SEA BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

ST. MARY'S HOSPITAL FOR SICK CHILDREN, Plaistow, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, laundry, &c. Also Assistant Resident Medical Officer. Salary £80 per annum, with board, residence, laundry, &c.

STOCKPORT INFIRMARY.—Assistant and Visiting House Surgeon. Salary £80, with residence, board, and washing.

THROAT HOSPITAL, Golden-square, W.—Junior House Surgeon (non-resident). Salary at the rate of £100 per annum and lunch daily.

WESTERN GENERAL DISPENSARY, Marylebone-road.—Second House Surgeon, unmarried. Salary £75 a year, with board and residence and 10s. a month for laundry.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon. Salary £75 per annum, with board, residence, &c.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon, tenable for six months.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—House Surgeon for six months.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Medical Officer. Salary £100 per annum, with board, lodging, and washing.

WINDSOR AND ETON ROYAL DISPENSARY AND INFIRMARY.—House Surgeon, unmarried. Salary £110 per annum, with residence, board, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

GERRARD.—On May 3rd, at Pembroke-avenue, Hove, the wife of Major Gerrard, M.B., R.A.M.C., of a son.

LLEWELLYN.—On May 16th, at Spondon, Derby, the wife of John Llewellyn, M.R.C.S., of a son.

PERRY.—On May 14th, at the Hutt, Petone, Wellington, New Zealand, the wife of W. D. Perry, L.R.C.P. Lond., M.R.C.S., of a son.

MARRIAGE.

KENDALL—IZARD.—On April 30th, at All Saints' Church, Blackheath, by the Rev. R. S. Kendall vicar of Luxulyon, Cornwall, uncle of the bridegroom, and the Rev. A. Izard, rector of Silindon, Sussex, Nicholas Fletcher Kendall, M.R.C.S. Eng., L.R.C.P. Lond., of Chiddingfold, to Kathleen Addison Izard, eldest daughter of W. Izard, Esq., of the Paragon, Blackheath.

DEATHS.

BIRTWHISTLE.—May 15th, at Budleigh Salterton, William Birtwhistle, M.R.C.S., second son of the late Rev. Canon Birtwhistle, in his 66th year.

PINUCANE.—At 26, Nightingale-road, Southsea, Hants, on the 15th of May, Daniel J. Pinucane, M.D., R.N., Deputy Inspector-General of Hospitals and Fleets, aged 73 years.

FYFFE.—On May 17th, at 2, Rodney-place, Clifton, William Johnstone Fyffe, M.D., Deputy Surgeon-General (retired), aged 75 years.

N.B.—A fee of 5s is charged for the insertion of Notices of Births Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE GENERAL MEDICAL COUNCIL AND UNREGISTERED DENTISTS.

To the Editors of THE LANCET.

SIRS,—Will you permit an old contributor whose first article in THE LANCET dates back to 1856 to enter a protest against the action of the General Medical Council in reference to unregistered dentists. Some two or three years ago I received from the Registrar of the General Medical Council a most impertinent notice telling me that if I employed an unregistered assistant I should be deemed "guilty of infamous conduct." I took no notice of this, as in New Zealand we have no assistants of any kind. But last year I received a similar notification about unregistered dentists. By this I was informed that if I administered an anæsthetic for an unregistered dentist I should be guilty of "infamous conduct in a professional respect." This was too much for my patience. The great majority of dentists here are not on the English Register, and apart from the outrageous misuse of the English language in calling the administration of an anæsthetic while another man is extracting teeth "infamous conduct," I was not going to submit to be dictated to by a council of trades unionists as to how I should carry on my practice. So I sent in my resignation and requested the Registrar to strike my name off the Register. This has been done. I was a fully-qualified practitioner four years before the Act of 1858 and I am a fully-qualified practitioner now. The registration in England gave me no rights that I did not previously possess and its absence deprives me of none, but I have had the pleasure of cutting myself adrift from the very useless and incompetent corporation called the General Medical Council whose actions for years past I have looked on with contempt.

I am, Sirs, yours faithfully,

R. H. BAKEWELL, M.D. St. And., *ad eundem* N.Z., M.R.C.S. Eng., L.M., L.S.A.

Auckland, N.Z., March 20th, 1901.

*** Dr. Bakewell does not appreciate the good work that has been done and is being done by the General Medical Council in preventing all sorts of unqualified practice. The regulation of the Council making it unprofessional for a qualified medical man to assist an unqualified dentist is one that meets with universal approval in the mother country, but the situation in many colonies is a different one.—ED. L.

BETA-EUCAINE.

To the Editors of THE LANCET.

SIRS,—Could you or any of your correspondents inform me if beta eucaine is always a satisfactory local anæsthetic? I have just had occasion to use it in a case of extraction of finger-nail. I injected about 30 minims of a 5 per cent. solution around the nail bed. The anæsthesia was all that could be desired, but there resulted around the tip of the finger, the day after the operation, swelling and an unhealthy blueness of the skin, and in some parts blisters were raised containing clear fluid. The finger presented such an unhealthy appearance that the patient feared blood-poisoning; and is at present very uneasy as to its ultimate progress. This is the third day since the operation, and the finger still looks unhealthy and considerably swollen. The preparation of eucaine was freshly prepared by a chemist, and all instruments were sterilised immediately before use, so that I am quite satisfied that this unlooked-for result is due entirely to the eucaine. I shall be obliged if anyone can throw any light on the matter.

I am, Sirs, yours faithfully,

Evesham, May 21st, 1901. L. F. LESLIE.

BENZ CARS.

To the Editors of THE LANCET.

SIRS,—If your correspondent "Cornwall" in THE LANCET of May 18th, p. 1442, who is thinking of buying a Benz car, buys one with a Crypto hill-climbing gear attached he will be able to get up any hill he will meet with. The ordinary two-speed car without this is not worth having in a hilly country. I have had a Benz car for the last two years and it has been occasionally available for use, perhaps half a dozen times during the last 12 months, on which occasions it has generally hindered a good deal more time than it has saved. And during the same period I have spent about £70 on it, and am still running up a bill. Nevertheless, I have still hopes of making a good car of it and of using it this summer. But if your correspondent thinks he is going to close his stables and save money by keeping a motor he is about to buy experience. I always advise prospective purchasers, "Get your bookseller to order you twelve-months' back numbers of the *Autocar*. Read them all through, advertisements and all. Then you will have some idea of the car most likely to suit you. Have nothing to do with pneumatic tyres or a pump. Finally, having selected your car, if, when you have paid for it and got it home you set fire to it you will know exactly what it has cost you." Before buying a car at all I would recommend anyone to read carefully a short article in the *Field* of May 3rd on the Diesel engine. If this engine does anything approaching what is claimed for it it will revolutionise the motor industry, though it will be certain to meet with a great deal of organised and interested opposition to start with. Remember, there are many hundreds of thousands of pounds invested in the output of existing engines and components.

I am, Sirs, yours faithfully,

Stratford-on-Avon, May 18th, 1901. HARRY LUPTON.

To the Editors of THE LANCET.

SIRS,—In answer to the inquiry of your correspondent "Cornwall" *re* Benz motor-cars I can confidently recommend them in a hilly district. With surface of main-roads good and by-roads bad I have used one for the last three years with entire success and a great saving over horseflesh. They seldom, if properly cared for, want any repairs and cost about ½*d.* per mile to run. If "Cornwall" will write to me direct I shall be glad to give him the fullest particulars.

I am, Sirs, yours faithfully,

T. PRICHARD ROBERTS, L.R.C.P. Irel., &c.

St. Albans, May 20th, 1901.

To the Editors of THE LANCET.

SIRS,—In answer to your correspondent "Cornwall" with regard to the above I can inform him that I have driven a Benz car for two and a half years and have done all my work in it. I have been over 15,000 miles and the upkeep has been about £40 to £50 a year. If the car is properly treated and looked after it is most reliable and quicker and cheaper than two horses. The new car is much stronger and better than the 1898 pattern. Messrs. Hewetson are most courteous and obliging, prompt in sending requisites, and moderate in price—very serious points if the parts had to be sent for from France and charged accordingly. One hears a lot of abuse of the Benz, but if a man cannot succeed with this car he could not with any. It is most simple, long-suffering, and reliable, which after all are the chief requisites for medical work. Of course it must be learnt, like anything else, and the only way to learn it is to drive it. My car is practically as good as new for work, though a bit noisy from wear.

I am, Sirs, yours faithfully,

May 20th, 1901. A. CHARPENTIER.

P.S.—With the Crypto gear it will go up any hill.

To the Editors of THE LANCET.

SIRS,—Your correspondent "Cornwall," in THE LANCET of May 18th, p. 1442, does not state which style of Benz car he thinks of using. The Benz firm is old-established, and makes cars of three horse-power up to 50. Probably the small three horse-power car is referred to. Having owned one of these and used it in my professional work for a year, and covered some 2000 miles in that time, I may say that they are certainly reliable but rather slow cars; they are also now considered by up-to-date automobilists as old-fashioned. Their great drawback, in my opinion, is the position of the engine—behind—which renders it difficult to make necessary adjustments, &c. These cars will go up gradients of one in four slowly if the surface is good and their solid tyres would stand the rough by-roads which, as I know from experience, are in Cornwall very loose and bad in the summer. The up-keep, of course, depends on the distance run in a given time, the care taken in driving, and the attention given to the car. In Cornwall repairs and renewals would frequently be needed. I would strongly advise a car of at least six horse-power with solid tyres if expense is to be considered. The three horse-power cars are very slow and unsatisfactory to drive on muddy roads in winter. I shall be pleased to give your correspondent any further information I can.

I am, Sirs, yours faithfully,

May 22nd, 1901. C. E. ABBOTT, M.R.C.S. Eng., &c.

Inquirens.—"Health in Africa," by Dr. D. Kerr Cross; pp. 222 (London: James Nisbet and Co., 21, Berners-street). "Management of Children in India," by Dr. Edward A. Birch; pp. 476 (London: W. Thacker and Co., Creed-lane). "Guide to Health in Africa," by Surgeon-Major Thomas Heazle Parke; pp. 175 (London: Sampson Low, Marston, and Co., Fetter-lane). "Maladies du Soldat aux Pays Chauds," pp. 181 (Paris: J. B. Baillière et Fils). "Die Krankheiten der Warmen Länder," by Dr. B. Scheube; pp. 661 (Jena: Gustav Fischer). "How to Live in Tropical Africa," by Dr. J. Murray; pp. 252 (London: George Philip and Son, 32, Fleet-street). "Guide Pratique d'Hygiène et de Médecine Coloniale," par Dr. Sadoul; pp. 202 (Paris: Augustin Challamel). "Cholera in Indian Cantonments," by E. H. Hankin, M.A. (Cambridge: Deighton, Bell, and Co.). "Medical Hints for Hot Climates," by Charles Heaton, M.D. (London: W. Thacker and Co.). "Tropical Diseases," by Patrick Manson, M.D. (London: Cassell and Co.). "Lectures on the Malarial Fevers," by W. S. Thayer, M.D. (London: H. Kimpton). "Thérapeutique du Paludisme," par F. Burot et M. A. Legrand (Paris: J. B. Baillière). "Maladies des Pays Chauds et Tropicaux," par Dr. J. Brault (Paris: J. B. Baillière). "Malaria," by Professor A. Celli; translated by J. J. Eyre, M.R.C.P., L.R.C.S. Irel. (London: Longmans). "Mosquitoes and Malaria," by C. Christy, M.B. (London: Sampson Low, Marston, and Co.). "Blackwater Fever," by W. H. Crosse (London: John Bale, Sons, and Danielsson, 83-89, Great Titchfield-street).

X.Y.Z.—C should attend the case, the unregistered man having severed his connexion with it. If the cause of death is clear he can give the certificate, but about this he must be guided by all the circumstances.

A Regular Reader of Your Paper.—The advertisement is an undesirable one, but we do not think, in all the circumstances, that it is worth noticing.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, May 23rd, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
May 17	30·20	E.	...	74	56	42	45	48	Overcast
,, 18	30·24	E.	...	104	64	43	46	51	Cloudy
,, 19	30·20	S.W.	...	106	70	43	53	60	Hazy
,, 20	30·26	E.	...	108	68	49	51	56	Overcast
,, 21	30·36	E.	...	113	67	47	50	54	Cloudy
,, 22	30·30	E.	...	113	69	50	53	60	Fine
,, 23	30·31	N.E.	...	114	68	49	53	60	Fine

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (29th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (30th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (1st).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

FRIDAY (31st).—BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—5 P.M. Ordinary Meeting followed by General Meeting. Election of Officers and Council. 9 P.M. Annual Conversazione. Dr. I. Burney Yeo: Hepatic Inadequacy. 6.30 P.M. Annual Dinner at Limmer's Hotel, Conduit-street, W.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEDNESDAY (29th).—HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Maguire: Bloodletting in Disorders of the Circulation.

THURSDAY (30th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. T. Edwards: The Treatment of Gleet.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Surgical Cases. (Post-Graduate Course.)

During the week marked copies of the following newspapers have been received:—*Northampton Reporter, Western Press, Hants County News, Cardiff Mail, Manchester Guardian, Bristol Mercury, Express Star, Dundee Advertiser, Leeds Mercury, Bolton Chronicle, Birmingham Gazette, South Wales Daily News, Hereford Journal, Rochdale Times, Worcester Chronicle, Sanitary Record, Liverpool Daily Post, Times of India, Pioneer Mail, Glasgow Herald, Yorkshire Post, Builder, Citizen, Scotsman, Architect, Derbyshire Times, Glossop Times, Perthshire Advertiser, Hexham Courant, Oban Times, Drapers' Record, Cambria Star, Derby Express, Church Bells, Acton Gazette Sheffield Daily Telegraph, Gloucester Journal, Preston Herald, Grantham Journal, Lincolnshire Chronicle, Norwich Press, Bury Guardian, Exeter Flying Post, East Anglian Times, Dorchester Telegram, Yeovil Advertiser, Taunton Mail, Penrith Observer, Scarborough Post, Public Health Engineer, Bristol Times, Cycling, Health, Weekly Register, Midland Daily Telegraph, Huddersfield Examiner, Cigarette World, Mining Journal, Lancaster Guardian, Reading Mercury, City Press, Surrey Advertiser, Ulster Echo, Flintshire Observer, Surrey Mirror, South African Weekly News, Surrey Times, Surrey Comet, Hertfordshire Mercury, Local Government Journal, Elgin Courant, Musical News, Ayrshire Post, South Durham Mercury, Ilkeston Pioneer, Cambria Leader, &c., &c.**

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A Clinical Lecture

ON

ACROPARÆSTHESIA, ERYTHROMELALGIA, SCLERODACTYLIA, AND OTHER ANGIO-NEUROTIC DISTURBANCES:

WITH AN ATTEMPTED CLASSIFICATION OF ANGIO-NEUROTIC DISORDERS OF THE EXTREMITIES.

Delivered at the West End Hospital for Diseases of the Nervous System, Welbeck-street, W.,

BY THOMAS D. SAVILL, M.D. LOND.,

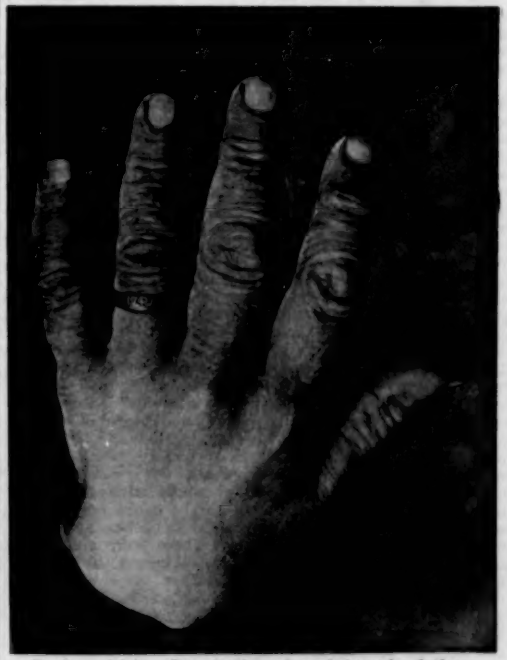
PHYSICIAN TO THE HOSPITAL.

GENTLEMEN,—"Acroparæsthesia"[1] is really a symptom. It consists of attacks of various sensory disturbances of the hands and feet, such as tingling or numbness, "pins and needles," usually without objective change, though if the patient be a close observer he may sometimes tell you that at the time of the attack the hands were unduly pale or unduly red and sometimes that there was swelling. It may occur alone, but it is quite as often associated with some other morbid condition, such as general paralysis, tabes dorsalis, or gastric disorder. "Erythromelalgia" may be regarded as a disease and the term was, I believe, first applied to it by Weir-Mitchell. The main feature consists of a painful redness with swelling or congestion of the extremities, associated with pain and the other symptoms just mentioned. "Sclerodactylia" is a term that has been applied to a localised form of scleroderma affecting the fingers and toes, and sometimes spreading to the wrists, the forearms, the ankles, and the legs.

The symptoms which these words indicate belong undoubtedly to the same category as those of Raynaud's disease. Possibly they represent an early phase, or a more chronic form, of that disorder. But the precise relation that they bear to it will be one of the questions which we shall have to investigate to-day. Acroparæsthesia and erythromelalgia are evidently very closely related, and these two conditions appear to be less uncommon than is usually believed, for during the past two years I have met with some 35 patients presenting these phenomena in a definite or marked degree. The first patient whom I intend to show you to-day is certainly one of the worst, and at the same time one of the most instructive, cases of *erythromelalgia* that I have met with.

CASE 1.—A woman, aged 52 years, first came to the out-patient department on Feb. 2nd, 1897, complaining of a painful redness and swelling of both hands. These disagreeable sensations in the hands had come on quite gradually and had lasted on and off for 12 months before I saw her. Both hands were almost equally involved, the right being a trifle the worse. The redness, swelling, and pain, which, she said, when it first started resembled "pins and needles," came on in attacks chiefly at night. Occasionally in the daytime the hands became worse, when, for instance, she let them hang down or put them into very hot or very cold water, and sometimes the attacks came on spontaneously; but at night the attacks gradually became so bad that she was unable to sleep and sometimes even to move or to get out of bed—so bad, indeed, that she had to leave off going to bed at night. A curious fact was that if she lay down in the daytime and tried to get some sleep an attack would come on. Assuming the horizontal position would make the hands worse, but if, wearied by a succession of sleepless nights, she dropped off to sleep, she was immediately awakened by the agonising pain in the hands, the wrists, and the forearms, for the redness and swelling gradually spread upwards. The hands had become almost useless owing to the stiffness and swelling, and latterly, even in between the attacks, the hands and forearms had become permanently swollen. There was never any margin to the redness; it faded off gradually to the healthy skin. The dynamometer on admission gave right 17, left 12, the normal with this instrument being about 60. This deficiency was not due to paralysis, but to stiffness and pain on movement. I show you a photograph (Fig. 1) of her

FIG. 1.



Erythromelalgia. Reproduction of a photograph of the hand of a female patient (Case 1), aged 52 years, showing puffiness and swelling. The crimson colour cannot of course be shown. The skin was tender and had a doughy feel on pressure, but there was no pitting.

hands at that time. They were both about equally crimson and congested and felt doughy, but did not pit on pressure. She could not put on gloves which she had worn six months previously. The enlargement was mainly due to congestion, because if they were held above the head for five or 10 minutes they became reduced in size and of a more natural colour. There was no history of any injury to the nerves, and there was no swelling or other abnormality to be discovered in the nerves of the extremities. The electrical reactions of the muscles and nerves of the arms were apparently normal. The patient is a married woman with three children, and she has no occupation, but her domestic duties include a great deal of washing. She gives no history of any illness, but she has suffered a good deal on and off from indigestion for some years. The change of life occurred at the age of 47 years. In early life she was much troubled with chilblains; and she has always been a "nervous" person, the slightest noise making her start and tremble, and latterly she has exhibited many of the symptoms of neurasthenia. In May, 1897, she had a curious attack of "loss of speech accompanied by twitching of the hands which lasted an hour or so." In the earlier days of her attendance at the hospital the hands were the seat of a constant, fine, rhythmical, nervous tremor, but now this is only observable when she is at all excited. Steady improvement was made under the administration of a mixture containing bromide of ammonium, and subsequently sulphate of magnesia, carbonate of magnesia, compound infusion of gentian, nux vomica, and belladonna were added. With this and the use of the constant current for seven months the attacks became milder and the hands less painful. Much of the improvement, I believe, is attributable to the galvanism. The negative pole was placed at the bottom of a jug of warm water and the positive over the nape of the neck. Each hand and arm was then inserted in the water, and as

[1] The term "acroparæsthesia" was first suggested, I believe, by Schultze (Deutsche Zeitschrift für Nervenheilkunde, 1893).

strong a current as she could tolerate was administered for from 20 to 30 minutes three or four times a week. During the three years the patient has been attending the hospital she has very often had a mixture of gentian, alkalies, and other remedies directed to the improvement of the digestion. On one occasion after she had become worse owing to her irregular attendance I administered large doses of chloride of calcium (20 grains, gradually increased to 30 grains thrice daily after meals), and she improved rapidly under this treatment. In one way and another she has improved so much that she has ceased to attend regularly.

These are the main features of the case excepting a most interesting attack which she had in October, 1897, when she was laid up in bed at home for seven weeks. The hands became very red and this and the swelling spread rapidly up the arms, the neck, and even to the face. Purple or crimson acutely painful blotches appeared on the arms, the trunk, and the legs, and these were described by the medical man who attended her for this illness and who kindly sent me particulars (for I did not see her myself), as "exactly resembling erythema nodosum."[2] When she resumed her attendances at the hospital the hands were still too stiff and painful to hold anything and she was unable to dress herself. The pulse has generally been somewhat rapid and the radial arteries certainly seem to be a trifle thick, but there is no definite arterial lesion discoverable here or elsewhere. The slightest excitement will increase the pulse-rate immediately. The heart appears to be structurally sound, but like the patient it seems to be "nervous," if I may use the term in that sense. She has suffered a good deal from headache at different times. Indeed, this is her chief complaint at the present time—the original disease having settled down into a chronic permanent erythromelalgic condition still liable to occasional exacerbations though of less severity. It is now limited to the hands and wrists, which are still painful, stiff, and relatively useless, and worse in the winter than in the summer. There is undoubtedly a certain amount of thickening of the skin but the enlargement is chiefly due to vascular turgescence.

A uniform red swelling of the hands of the kind before you might be due to three anatomical lesions—organised infiltration, œdema which has become inflamed (cellulitis), and vascular turgescence (congestion). There is no pitting on pressure, so it cannot be simple effusion of serous fluid (œdema) such as occurs in dropsy; and it is not due to myxœdema because the patient has not the other signs of that malady. There is not any marked degree of general infiltration because, as Mr. R. E. Hanson has just demonstrated, the swelling and redness can be reduced by the simple process of holding the hands above the head. After holding the right hand up for two minutes the circumference of the fingers is reduced by one-eighth of an inch, and this is accompanied by a sensation of tingling. After being held up for 15 minutes longer the fingers undergo a further reduction of one-sixteenth of an inch. These changes are attended by numbness and tingling in the hand, and there is an obvious difference to be seen between the two hands as regards their size and feel. The left hand which has been in the patient's lap is obviously larger and the skin feels thicker.[3] It is therefore mainly an undue vascular turgescence. The fact that gravity exercises such a marked influence shows, I believe, that the vaso-motor mechanism is at fault. There is a permanent localised paralysis of the vaso-motor mechanism of the hands. Again the capillary reflex (as tested by Haig's hæmodynamometer) is delayed. It amounts to eight seconds, whereas after subduing the congestion by elevating the member it amounts to only four seconds. The main lesion, therefore, in this case, is a vascular turgescence, an active or arterial hyperæmia of the hands, and it will be interesting to speculate as to the probable cause of it.

[2] The letter which Dr. H. G. Sworn kindly wrote me is worth quoting *in extenso*. The patient "had severe pains in the arms and legs, with patches of redness (like erythema nodosum) on the flexor and extensor surfaces, also on the hands and feet. The patches disappeared in about a week, leaving brown discolourations on the skin; they were succeeded by fresh patches. At that time I looked upon the case as due to rheumatism and therefore treated her with salicylate of soda. The temperature varied from 99° to 101° F. Her urine deposited urates and was very acid."

[3] This experiment of holding up the hand and then measuring was suggested by my friend and pupil Mr. R. E. Hanson. The experiment was repeated with the left hand with the same result.

There are three possible causes of arterial hyperæmia. 1. There are certain agencies which have a weakening or paralysing effect directly on the involuntary muscular fibres in the tunica media of the arterioles. Fatigue after prolonged contraction such as that produced by prolonged exposure to cold is one instance of this and the hyperæmia after sudden removal of mechanical pressure is another, both of them being local agencies. 2. There may be paralysis of the sympathetic nerve fibres leading to loss of the continuous vaso-tonic contraction which we know is constantly present in the arterioles. Certain drugs (pilocarpine, amyl nitrite, &c.) are believed to act in this way directly on the nerve fibrils or vaso-motor centres. Reflexly, by inhibition the same effect may be produced—namely, by stimulation of a sensory nerve. 3. Excitation of the vaso-dilator nerves which physiologists have shown to exist, at any rate, in the chorda tympani. Now, I may say at once that my own view is that the case before us is partly dependent on the first of these causes, for her domestic duties involve an unusually large amount of washing. At one time her hands were always being exposed, and therefore the muscle-fibres of the arterioles becoming fatigued. This is probably why her hands were the chief seat of the mischief. But this does not explain the whole of the case, and it cannot account for that remarkable and severe attack of erythema from which she suffered in other parts of the body. The cause of this must, I believe, have been some generalised agent, such, for instance, as a toxic blood state.

Now in this case it may be remarked, in the first place, that there have never been any evidences or symptoms of any derangement either of the peripheral nerves or the central nervous system beyond a general irritability (as witnessed by the extreme nervousness and the "nervous" tremors of the hands), such as is so frequently associated with toxic blood states, as pointed out in my lectures on neurasthenia.[4] Indeed, I think we may assume that a toxic blood state is in operation in this case producing a general neurasthenic condition, and at the same time paralysis of certain of the vaso-motor nerves. An interesting feature in this case was the great increase of pain which ensued when the patient went to sleep, and this quite tallies with the explanation that I have suggested. You are aware that during sleep the tonic or continuous action of the vaso-motor centre is less, and the vessels of the surface of the body dilate; that is why we take cold so readily and why we feel the cold so much more during sleep. But this latter dilatation, added to that already existing in the hands, greatly aggravated the condition. Against the toxic origin it might be argued that the lesion was too localised for a hæmic derangement. But apart from the known proclivity which toxins have for certain localities we have seen that there existed here a determining factor in the large amount of washing and exposure.

That toxins may produce vaso-motor derangement, and that they may produce conditions very closely allied to that before us, we see in the case of ergotism where the hands are affected with an extreme vaso-constriction. Arsenic also, as seen in the recent epidemic of beer-poisoning in the north of England, may produce erythromelalgia.[5] Erythematous conditions are fairly frequently met with when antitoxins are injected for the purpose of immunity. As to the nature of the toxin in vaso-motor conditions of the extremities it is purely a matter of conjecture. We have seen that this patient suffered a good deal from dyspepsia, and the imperfectly elaborated food products must necessarily form a potent source of perverted blood states. Patients with chronic dyspepsia are very apt to complain of coldness and blueness of the hands and feet, and we probably have, in the case before us, an aggravation of that condition. Indeed, it appears to me that we find in this patient's prolonged gastric derangement an explanation both of her neurasthenic symptoms and of the vaso-motor paresis which constituted the leading and most troublesome feature of the case.

CASE 2.—The patient who is coming into the room directly has suffered from Graves's disease for some years, a malady which is very frequently attended by vaso-motor symptoms and especially by some degree of *acroparæsthesia* more frequently, I believe, than is generally recognised. I

[4] Clinical Lectures on Neurasthenia; Glaisher, London, 1899.

[5] Reynolds: Transactions of the Royal Medical and Chirurgical Society, November, 1900.

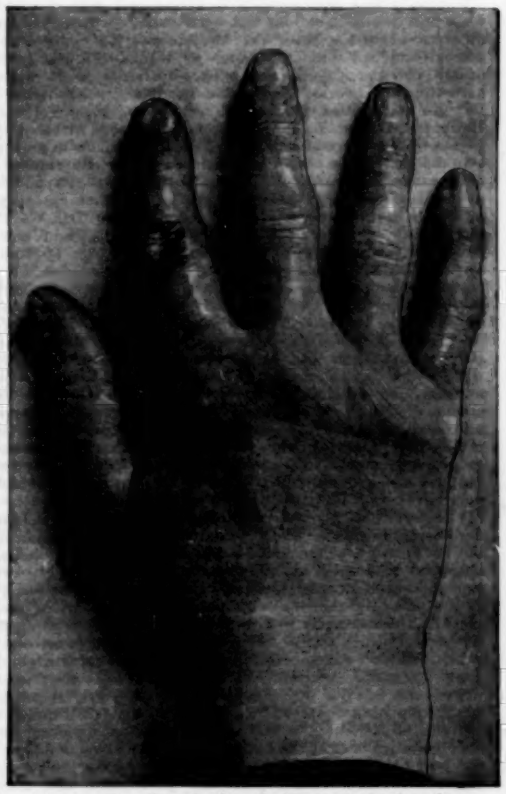
am not sure that if inquiry were made the majority of these cases would not be found to have been affected in this way at some time during their illness.

The patient is a single woman, aged 36 years, who has had thyroid enlargement and proptosis. But the prominent symptoms in her case have always been those referable to the cardio-vascular and the central nervous systems. She is highly nervous, and she has suffered so much from agoraphobia that she has been seldom able to come to the hospital alone, though she has attended on and off for the last five years. During that time she has twice, for a period of three months, had to be placed in an asylum, so unrestrainable did her temper become. This patient presents several vaso-motor symptoms besides the rapid pulse which also probably comes into this category. She very easily flushes, and from time to time she has complained of numb sensations and "pins and needles" in the hands. This numbness is sometimes preceded by pain, the hands feeling, she says, as if they were "being crushed." During the attacks they get red and "puffy." These attacks sometimes come on spontaneously, but they may be determined by putting them in very hot or very cold water, and, like the previous case, they are worse at night when she goes to sleep and whenever she lies down, even during the daytime. She states that her mother, her maternal grandmother, and one of her sisters had their hands affected in the same way.

CASE 3. *Sclerodactylia.*—In Case 1 we had to do with attacks of painful redness and swelling of the hands, but now by a fortunate chance I am able to show you a case of precisely the opposite condition. You will remember that in Case 1 there was a dilatation of the vessels, a vascular paralysis, but in this patient we have to do with a vascular spasm, a pallor, followed by a hardening or sclerosis of the skin. The case which I am about to show you resembles Case 1 in one respect—viz., the hands are the chief seat of the disease, and the same lesion which affects the hands and forearms has appeared also on other parts of the body. It is a noteworthy fact in this case how the marked degree of sclerosis which was at one time present has almost entirely disappeared, so that I am only able to show you what remains of this.

The patient, aged 43 years, is a married woman, and the history of her illness is as follows. In 1895, at the age of 38 years, two months after a confinement, "white patches" appeared on the body. These have never disappeared and you will see on the left side of the thorax and abdomen two smooth white "ivory-like" areas, each of about the size of the hand, presenting all the features of scleroderma or, as Sir Erasmus Wilson called it, "morphœa." At one time the skin was almost as hard as gristle, but it is considerably thinner and more supple now. Shortly after these white patches appeared she began to be affected with attacks of "pins and needles" in the hands and feet. At first these attacks only came on at night and they were easily relieved by putting the hands out of bed, but by degrees they became much more severe, very painful, and gradually the condition became more or less continuous, though always paroxysmal. In addition to these sensations she noticed that the hands were becoming stiffer, owing apparently to the gradual increase in thickness of the skin. The hands, she told us, became slightly flushed just for a moment at the onset of the attacks, but did not swell, and immediately afterwards they became extremely pale and remained so. During the attacks the skin sometimes became "wringing wet with perspiration." Around the joints the skin and subcutaneous tissue gradually became much thickened so that the joints were very stiff and she could not close her hands. This thickening of the skin and subcutaneous tissue extended up the forearms for a considerable distance. This impeded the action of the muscles, which seemed matted together and bound down by the hard sclerosed skin. The feet, in this case, were similarly and equally affected, so that this unfortunate woman in the course of eight or 10 months was hardly able to walk because the ankles and the calf muscles were so stiff and "hide-bound." In November, 1896, before she came under my care, the tip of the second toe of the right foot became "cold, dead, exceedingly painful, and finally the skin at the end of the toe came off and left a sore which healed slowly and with a great deal of pain." You will see that there is a superficial scar there now. It was a year after this—in November, 1897—that I first saw her, and her hands and feet were then so stiff and painful that she could not close the former, and was hardly able to walk. The fingers were pale, thin, and tapering, owing apparently to the contraction of the skin, for the joints stood out, giving an appearance of enlargement. There was then, and there is still, you see, a certain amount of enlargement in the position of the joints owing to the thickness of the skin over them, and their movements are stiff for the same reason. But the enlargement is, I believe, more apparent than real, and due to the changes in the skin, which, by contracting down on to the shafts of the phalanges, causes the joints to stand out (Fig. 2). She was still (in November, 1897) subject to

FIG. 2.



Sclerodactylia. Reproduction of photograph showing the ultimate condition of the fingers and hand of a female patient (Case 3), taken in December, 1900. The residual thickened, glossy, "hide-bound" condition of the skin can be seen. The contraction of the skin upon the parts beneath gives an appearance of enlargement of the joints, because such contraction naturally takes more effect on the soft parts between the joints, and the bone ends thus stand out, as they do in the skeleton hand. The fingers appear to be tapering from the same reason. The patient could not even at this time completely close or completely straighten the fingers as she used to do, hence the slightly curved condition of the fingers.

slight attacks of "pins and needles," followed by pallor and perspiration. This hardness of the skin and subcutaneous tissue extended nearly up to the elbows in the forearms and nearly up to the knees in the legs, and you will see that the skin in these situations is smooth and glossy, but it is now very little, if at all, thicker than normal. The feet are still subject to occasional attacks of pallor and sweating. As regards her previous history and family history there is nothing of importance to note. She has two healthy children. At first I put her upon iodide of potassium, but she got steadily worse, so that at one time she could hardly use her hands and arms to feed herself and she suffered greatly with pain. In July, 1898, I gave her thyroid extract (five grains) three times a day. This was subsequently supplemented by galvanism to the arms and legs three times a week for about two months, but I believe that

it was the thyroid extract (unless, of course, it was the spontaneous course of the disease) under which she made steady improvement. Week by week, month by month, the skin gradually became softer and more supple and natural and she gradually recovered the use of her hands. She is now, as you will see, apparently well, though any excessive amount of work or excess of cold or heat determines an attack of the same nature. She can walk fairly well now but the gait is still very inelegant. The patches of morphœa on the thorax are still visible, but they also have improved. They never gave her much trouble at any time.

Clinically this case appears to correspond with a somewhat rare condition which has been variously described by different authors. Thus, the "sclerodactylia," or "acroscleroderma" of French authors, to which this case most nearly corresponds, is a condition referred to in some dermatological works[6] under the heading "scleroderma." But Kaposi[7] states that it is by French authors (Ball, Hallopeau, Dufour, Lepine) *erroneously* identified with scleroderma. Some German authors,[8] however, include it among skin diseases. The condition described by Mr. Hutchinson[9] as "acroteric scleroderma with liability to Raynaud's phenomena" probably also belongs to the same category, and a case has recently been recorded by Dr. W. P. Herringham[10] under the title "scleroderma and sclerosis of the muscles with recurrent attacks of local syncope." Dr. F. Parkes Weber[11] has recorded a case having some resemblance to this one under the title "trophic disorder of the feet—an anomalous and asymmetrical case of sclerodactylia with Raynaud's phenomena." But Dr. Weber's patient presented cyanosis (i.e., asphyxia) instead of pallor (i.e., syncope) combined with dermal and sub-dermal sclerosis, and only the feet were affected. In other respects the cases had a good deal in common, though the ulcerative or gangrenous process appeared to be progressive in his case and retrocedent in mine. But, after all, the application of a name does not help us very much. The chief thing to do is to identify the pathological process which is at work. In the case which you have just seen there were two anatomical lesions: (1) recurrent attacks of vaso-constriction, and (2) scleroderma of the skin and parts beneath, limited almost, but not entirely, to the four extremities, and one of the first questions to answer is, What is the relation of these two lesions to each other? Are they products of the same cause? Is the sclerosis the result of the vascular lesion, or *vice versâ?* Unfortunately, we have not many data to go upon, but sclerosis such as this seems to me to be almost certainly connected with some obstruction to the return of the lymph from the parts involved. We know how intimately associated the arteries and the lymphatics are, and it seems highly probable that the real cause of the condition is a vaso-motor lesion, of a vaso-constrictor type, affecting the vaso motor centres of the extremities in the spinal cord and rendering the skin of these parts unduly sensitive to external agencies. This would explain the paroxysmal and other features of the case. This would also explain the fact that the two processes (the syncopal attacks and the sclerosis) got worse and better together, allowing, of course, for the fact that the sclerosis of the tissues required longer time for absorption.

CASE 4.—In this case, again, one of "*dead-hands*," we have a vascular spasm with pallor as in the patient who has just gone out, instead of redness and swelling due to vascular dilatation. The patient is a single woman, aged 26 years, and all her life the fingers have "gone dead" whenever they have been exposed to cold. They have got much worse lately and it is for this that she comes to the hospital. In these attacks the fingers and hands assume a deadly pallor, feel quite numb and devoid of sensation, and after remaining white for some little time they resume their normal colour and then become a trifle livid. As the pallor passes off she feels a sensation of "pins and needles" and a tingling pain shoots up the arms, sometimes very severe. These attacks do not seem to be determined by anything excepting exposure to cold. They are rather more frequent at the catamenial period and are much worse in cold weather; she dare not wash in cold water. Sometimes she has had as many as a dozen attacks in a day. A whole attack may last from half an hour to two hours or so, and sometimes, she says, the hands will remain continuously white "for a long time." Warmth will generally shorten the attack. The patient came to me first in December, 1898, and all through the winter she had an average of a dozen attacks a day. As regards the capillary reflex it seems at the present time to be about normal. This case resembles an early phase of the syncopal or ischæmic form of Raynaud's disease, but the patient presents none of the other symptoms. There is no alteration in the texture of the skin of the hands or elsewhere. The heart and the arteries are normal, the arterial tension seems normal, and the pulse is normal, though it is easily increased in rate. The face is pale, but she says it has always been so. Hitherto, there has been no swelling of the hands at any time, but for the last fortnight the fingers, she says, have occasionally become a little swollen. In July, 1899, I noticed that she occasionally had a fine rhythmical tremor of the hands, and you will observe that it is present now. The association of tremor with vaso-motor lesions, both paralytic and spasmodic conditions, is in my experience a fairly frequent occurrence, but the explanation of the connexion is not very apparent. I think that they must both be the product of a common cause; and perhaps that may consist of a toxic blood condition. There is nothing of importance in this patient's personal or family history and she has never been subject to chilblains. As regards treatment, she got a little better at first under the administration of nux vomica, belladonna, and bromide of ammonium, combined with the use of the constant current, applied as in Case 1. In July, believing that the indication here was to relax the vascular spasm, I prescribed for her trinitrin in one-minim doses three times a day. It has certainly realised my anticipations and now, although the weather has been very much colder, she has greatly improved. This remedy has, I believe, done her more good than the electricity and the bromide. In order to test the efficacy of the trinitrin I have twice left it off, all the other conditions remaining the same, and each time the attacks returned.

CASE 5.—In this case (*acroparæsthesia* with other vaso-motor attacks) the *erythromelalgic* symptoms were quite transient and, compared with the other features of the case, relatively unimportant. They consisted of painful sensations in the hands attended by purple colouration. But as regards the other features, it is one of the most distressing cases of vaso-motor disorder I have met with.

The patient is a married woman, aged 38 years, who has suffered from the attacks about to be described practically ever since the age of puberty. She has sought relief at the hands of many physicians and has taken, she told me, many pounds of bromide. She is of the full-blooded type, tall and stout, with crimson cheeks and lips, and very energetic; but her life has been practically spoiled by a constant succession of three different kinds of attack, which merge, however, one into the other. First, she has been subject to "flushings" of the face and surface of the body, sometimes attended by actual swelling on the slightest excitement, several times a day. In one of these attacks I found that her neck measured three-quarters of an inch larger than normal. Secondly, she has had some very strange attacks which she aptly terms "rushes of blood to the head" attended by giddiness and "swimming in the head." Objects appear to whirl round and she is apt to fall unless she has support. On one or two occasions she did fall and injured herself. The pain in the head is very severe, the head feeling as though it "would burst" and as though it was "opening and shutting" with every beat of the pulse. The giddiness lasts from five to 10 minutes, but the bursting feeling in the head persists for an hour or so afterwards. In these seizures the surface of the body becomes cold and clammy and the pulse completely disappears from the wrist. She might have two or three of these attacks a day for a day or two, followed by an interval of a week or so; though even then she not infrequently has slighter attacks of the same nature—giddiness with a sensation of blood "rushing to the head." Thirdly, she is subject from time to time to headaches lasting for 24 hours or so, having all the characters of migraine. They generally follow a night

[6] See Dictionnaire des Sciences Méticales, third series, 1879, vol. vii.
[7] Diseases of the Skin, translation by J. C. Johnston; Baillière, Tindall, and Cox, London, 1895.
[8] E.g., Lewin and Heller: Charité-Annalen, Berlin, 1894, vol. xix.
[9] Archives of Surgery.
[10] Transactions of the Clinical Society of London, 1900, vol. xxxiii.
[11] British Journal of Dermatology, vol. xiii., No. 2.

of "horrible dreams," are relieved by emesis, and are succeeded by extreme prostration lasting for several hours. The scalp is acutely tender for some days. On several occasions the headache has been attended by scintillating scotoma ("like catherine-wheels"), and one attack was succeeded by right homonymous hemiopsia lasting for two or three days. These three kinds of attacks, which have troubled this unhappy lady on and off all her life, have certain features in common. They are all specially apt to come on directly after she rises from her bed in the morning and the slighter ones may be determined at any time by suddenly assuming the erect posture or by being startled. Raising her arms, a movement that may be necessitated, for instance, by an attempt to "do her own hair," will invariably bring on the "giddy attacks" or rushes to the head. Lying down relieves them all in some degree, but if she sleeps with her head low she has very bad dreams and always has a "giddy attack" in the morning. The bowels are apt to be confined and the attacks are always worse then. There is a vague history of "consumption" in the family; but apart from these distressing attacks this patient has been otherwise healthy all her life excepting for an attack of what was called "rheumatic arthritis" with which she was laid up for eight weeks in early life. The catamenia have always been very irregular. The attacks are worse at the expected period and are very severe if, as frequently happens, she misses altogether. Nothing abnormal can be discovered in the heart or viscera. She has been troubled lately with flatulent dyspepsia. She has slight hypermetropia (which has been accurately corrected by glasses), and slight granular pharyngitis. As regards the latter Dr. Scanes Spicer reported, "I do not regard this as sufficient to account for her symptoms." This patient presents certain neurasthenic, or what, perhaps, some would call hysterical, symptoms. She is very "nervous" and easily startled, and she has not dared for some years to go out alone (agoraphobia). If she did horrible imaginary dreads would come over her or an attack of "giddiness." In past times many of this patient's symptoms would probably have been regarded as "hysterical," but about the reality and severity of her sufferings there is no doubt and she has vainly endeavoured for many years to get relief.

It appears to me that the chief lesion in this case is a defect of the coördinating power in the vaso-motor centre which allows the blood to collect in one part (generally the head) instead of into "the overflow reservoir"—viz., the splanchnic area. This defect, which is probably inherent or inherited, is apparently accompanied with an undue irritability of the spinal vaso-motor reflex centres. How to correct the former I was completely at a loss, but for the latter I ordered her a descending constant current to the spine and it was certainly attended with considerable benefit, for at the end of two weeks she reported, "The rushes have been much less frequent and lasted a much shorter time." To correct what I believed to be the causal agency of this defect attention was directed to the diet, for on inquiry I learned that she lived somewhat too well and was in the habit of passing excess of lithates in the urine. Copious libations of warm water and practically a nitrogenous diet were prescribed. This produced a further amelioration, especially in the severe attacks of migraine, but unfortunately she was not able to persist in the rigorous diet which I had ordered her, and the relief was only partial.

In the next two patients the acroparæsthetic symptoms, as in the previous case, are of quite subordinate interest. In the first of these two they consisted of a feeling of numbness and tingling in the hands when the other seizures to which he was subject came on. He did not notice whether the hands got pale or red. We have seen that flushing or pallor may take place in many situations. If on the surface we can see the phenomenon, but if in the interior of the body it can only become manifest in other ways. The following case I believe to be due to flushing or pallor of the brain, this being due apparently not so much to vaso-motor or sympathetic disturbance as to cardiac failure combined with rigidity of the systemic vessels. Nevertheless, for reasons which will appear, I believe that the defect in other parts of the vaso-motor system played their *rôle* here also, otherwise postural alterations would not have played so important a part.[12]

[12] Dr. Leonard Hill denies the existence of vaso-motor nerves in the brain. It is not a point of prime importance to our present argument but it is difficult for clinical observers to accept this statement in its entirety.

CASE 6. *Acroparæsthesia accompanying various circulatory "attacks."*—A man, aged 54 years, first came to the out-patient department in October, 1898, complaining of "attacks" of various kinds which had troubled him for about seven years, at first only at somewhat rare intervals. He looks, as you will observe, considerably older than he is, and in point of fact he exemplifies the truth of the adage that "a man is as old as his arteries," for these are much impaired. He has suffered a great deal from attacks of vertigo, which came on whenever he assumed the erect posture or executed any movement which threw a strain upon the heart or circulation. The giddiness was sometimes attended by interruption of thought and sometimes he would be actually unconsciousness for a few moments, and on several occasions he fell. Latterly these attacks, commencing with giddiness, have presented all the phenomena of a severe syncope; finally, sometimes they have been followed by convulsive seizures presenting all the appearances of an epileptic fit. It has been shown by Kussmaul[13] that both anæmia and congestion of the brain may be attended by convulsions, and there is no doubt that all the various forms of attacks from which the patient has suffered—vertigo, interruptions of thought, transient loss of consciousness, syncope, and epileptiform attacks—were all due to disturbances of the circulation within the brain. The fact that the attacks could be determined by assuming the erect posture pointed very strongly in this direction. Careful investigation showed that there were no evidences of the other possible causes of the vertiginous or other attacks, and he had never had epilepsy in earlier life. There were, on the other hand, undoubted evidences of both cardiac and vascular disease, and, as we shall see, relief of the circulatory difficulties resulted in the immediate relief of the attacks. When he first came to the hospital he could not walk alone on account of the extreme giddiness from which he suffered. The breathlessness was very marked, the pulse was extremely feeble, rapid, and irregular, and of very low tension. The heart was considerably dilated both to the right and to the left, and the apex beat was situated half an inch outside the nipple line. The auscultatory signs were consistent with a dilated heart in which the valves, apart from the dilatation, were healthy. All the superficial vessels were thick, hard, and tortuous. He was ordered chloroform, ether, and ammonia, and subsequently digitalis was added—nothing else—and his improvement was almost, as he expressed it, like magic. He has now been attending almost a year, the treatment all the while being directed to the heart. He came to us believing that his days were numbered, and to-day he has asked for the second time to be allowed to return to work. The heart has almost resumed its normal dimensions and the only attacks he now has are the slighter vertiginous ones, and these only occasionally. I may add that some of this patient's epileptic attacks were "latent"—e.g., were unattended by convulsions—and in one of these he walked into his bedroom and began to undress without knowing what he was doing.

In this patient the acroparæsthesia was quite a subordinate feature, and I have brought him before you not so much as an example of angio-neurosis as to show you what grave effects may ensue from serious vascular and, as I hope to prove to you hereafter, angio-neurotic disorders. The case is a very instructive one, and it is somewhat unusual in that it is rare for the circulation of the brain to be so profoundly disturbed as to produce syncope, unconsciousness, and epileptiform convulsions without death speedily ensuing. I can only remember to have seen one similar case within the last 10 years. It was that of a woman, aged 61 years, in whom epilepsy was supposed to have supervened for the first time at the age of 56 years, a very unusual circumstance, as you are aware. She had very strange attacks in which she did not fall but stiffened herself and leant against the nearest object quite unconscious, working her arms and jaws in a most peculiar manner. This stage was followed by stertorous respiration and a period of drowsiness. The illness had begun seven years before and as, in the male case, the attacks, which at first consisted of vertigo, gradually became more severe, were attended with unconsciousness, and finally assumed the characters I have just described. She also improved under remedies directed to the cardio-vascular system. I might add that in both of these cases a cessation of the treatment was attended with a return or exacerbation of the attacks.

Is it possible that these patients had a thrombosis or

[13] Translations of the New Sydenham Society.

embolism of the brain—though there were no evidences of it—and that it was this lesion which rendered the brain unusually susceptible? In any case it was clearly the disturbance of the circulation which produced the epileptiform seizures. These observations help to confirm the notion that attacks of idiopathic epilepsy are due to vascular alterations in the brain, a fact which might be borne in mind in the treatment of the latter affection. I hope to return to this subject on a future occasion.

CASE 7. *Acroparæsthesia accompanying hemicranial sweating and flushing.*—In this case the patient is subject to attacks of tingling, numbness, and pallor of the hands from time to time, which resemble those in Case 4. The chief interest of the case, however, rests in other directions. Here we can localise the main lesion with considerable precision—viz., in the superior cervical sympathetic ganglion—and we can say that it is a paralytic or destructive lesion as distinguished from an irritative one. The patient, a woman, aged 52 years, complained of attacks of excessive perspiration preceded by a slight flush of the left side of the face and head. She habitually sweated more on this side of the scalp, and her hairpins got rusted on that side. When she was excited this sweating got worse and she then had a running from the left nostril. She complained also of attacks of pain in the forehead and on the top of the head, chiefly down the left side to the neck which were worse when she was in a draught or out in the cold. The attacks of pain or of sweating were sometimes ushered in by a "dragging pain" in the chest. She was very apt to get generalised flush-storms, when she went "hot all over" and perspired, then finally "went cold," when she might shiver. These attacks came on when she was "nervous." The pain in the head might also be determined by washing in cold water. These symptoms have been present on and off for three years. The wetness of the head has been her chief trouble and it was for this symptom chiefly that she applied. Here, then, we have attacks of vaso-dilatation of the left half of the head and neck, the area which is controlled by the cervical sympathetic. Let us see if there are any other symptoms of paralysis of that structure. You will observe that the left pupil is larger than the right and that it seems to get larger and smaller (more or less rhythmically) as one looks at it. There is no obvious alteration in the palpebral aperture, the ocular tension, or the prominence of the eyeball. When she is frightened or worried the pain in the head feels worse, so also are the perspiration and the running from the nose. The appetite is not good. The bowels are confined. The menopause occurred two years ago. Her present symptoms date from an illness which appears to have been influenza and with which she was laid up in bed for two or three weeks. She is subject to cold feet, and she had chilblains as a child, but there is nothing else of importance in her history. It is evidently a marked instance of a paralytic lesion of the sympathetic ganglion in the neck on the left side. There is no evidence of any growth or swelling in the neck. The case is probably connected in some way with the influenzal attack to which I have just referred. To-day is the first time that she has come to the hospital and I propose to give her ergot, bromide of ammonium, and mistura alba.

I have brought these seven patients before you because they are attending the hospital now and because their cases seem to illustrate fairly well some of the many different symptoms of angio-neurotic disorder. There are many others which I could mention, but I think that it is hardly necessary for our present purpose. They all presented acroparæsthesia or some other angio-neurotic disturbance of the extremities; and in conclusion I should like to add a few remarks, first, on the etiology of acroparæsthesia; secondly, on the most prominent symptoms which this and other vaso-motor disorders present in common; and thirdly, on the classification of these acroparæsthesic cases and the relation which they bear to Raynaud's disease.

First, as regards the etiology of acroparæsthesia. Out of 35 marked cases which I have recently observed, 29, or 82·8 per cent., were females. Excluding two children, aged four and 10 years respectively, the average age was 32·4 years. In 10 patients these conditions were secondary to other maladies, such as neurasthenia, hysteria, Graves's disease, acromegaly, and general paralysis of the insane, but the rest (25) applied for relief of the acroparæsthetic conditions.

Acroparæsthesia, erythromelalgia, and the other many and varied vaso-motor symptoms have certain features in common. 1. They are much more frequently met with in the female sex, the proportion, I find, usually being much higher than that above mentioned. I imagine that something like 90 per cent. of these cases occur in female patients. 2. Vaso-motor conditions appear to be due to some inherent and very often inherited tendency in the patient, for they recur again and again in one form or another during the life of an individual. Thus, a patient may have migraine at one time, severe flushings at another, and syncopal attacks at another, though I have generally found that there is a tendency to a recurrence of the same disorder. There are, moreover, two epochs of life which are specially prone to their development—namely, puberty and the climacteric. 3. The onset of the symptoms, whatever they may be, is always more or less sudden. 4. They are in all cases paroxysmal—i.e., they occur in the form of attacks. There is a sudden rise, when the symptoms soon reach their acme, followed by a gradual descent. In severe cases the attacks may be so frequent as to resemble a continuous malady, but close observation will detect that there are well-marked exacerbations. 5. In the great majority of the patients flushes or flush-storms occur from time to time during the patient's life; should these be absent there are generally other evidences of vaso-motor instability. 6. A great many of them—particularly of the vaso-dilator kind—are amenable to treatment by bromides, which relieve them at any rate for a time. These six features are very instructive, and many of them may be explained by the study of the physiology of involuntary muscular fibre. This and other points must be referred to a future occasion, but I wish, in conclusion, to reduce, if possible, vaso-motor conditions of the extremities to something like order and to consider what relation they present to the disease first described by Raynaud.[14] The result of my experience is embodied in the following classification and you will observe that the cases which we have seen together to-day fall naturally into one or other of the different groups.

CLINICAL CLASSIFICATION OF VASO-MOTOR DISORDERS OF THE EXTREMITIES.

A. VASO-DILATATION.—(*a*) *Early stage* (*chronic*).—Attacks of redness (congestion) and tingling, burning, &c. (*congestive acroparæsthesia*)—e.g., Case 2 and Case 5 and early stages of Case 1. (*b*) *Late stage* (*chronic*).—The symptoms are attended by swelling which gradually becomes permanent (*erythromelalgia*)—e.g., Case 1. (*c*) If the process takes an *acute* course the symptoms go on to gangrene, usually moist gangrene (*Raynaud's disease*—congestive or asphyxial type).

B. VASO-CONSTRICTION.—(*a*) *Early stage* (*chronic*).—Attacks of pallor and bloodlessness (ischæmia) attended by numbness, tingling, "pins and needles," "dead fingers," &c. (*ischæmic acroparæsthesia*)—e.g., Case 4 and Case 7. (*b*) *Late stage* (*chronic*).—The symptoms may be attended with thickening (sclerosis) of the skin and subcutaneous tissue (sclerodactylia)—e.g., Case 3. (*c*) If the process takes an *acute* course dry gangrene probably results (*Raynaud's disease*—syncopal type).

It will be seen that these varieties correspond to the different varieties and phases of Raynaud's disease, which begins in one or other of the above ways and may go on to gangrene. These cases are also probably related to the condition described by Dr. Henri Meige and others[15] under the name of "chronic hereditary atrophœdema."

Attacks of perspiration (hyperidrosis) which are sometimes met with in the extremities, probably come under the same category also, but it would not do to include these in the above classification, because although the derangement is probably seated in the sympathetic nerves, and the sweating is very generally attended by flushing, we are not sure that the sweating is not controlled by separate nerves.

These cases, gentlemen, brought together by the chances of clinical work, will give you a very fair notion of acroparæsthesia and erythromelalgia, and the relation, as it appears to me, of one to the other, and to Raynaud's disease.

[14] On Local Asphyxia and Symmetrical Gangrene of the Extremities, Thèse de Paris, 1862; also new researches on the same subject, Archives Générales de Médecine, January, 1874.

[15] Desnos: Bulletin de la Société Médicale des Hôpitaux, February, 1891. Higier: Petersburger Medicinische Wochenschrift, 1894. Meige: Presse Médicale, December, 1898. Henri Meige: Nouvelle Iconographie de la Saltpêtrière, November, 1899. Lannois: Nouvelle Iconographie de la Saltpêtrière, November, 1900.

We know very little about the sympathetic nervous system. Laboratory experiments, which, by the way, are not wanting, have not thrown much light on the subject; and the first step in an inquiry of this kind seems to me to get a clear notion of the clinical phenomena we wish to investigate and their relation to one another. This has been my object to-day.

ARTERIAL HYPERTONUS AND ARTERIO-SCLEROSIS: THEIR RELATIONS AND SIGNIFICANCE.[1]

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Introductory.—I propose to ask your attention to-night, first to the various applications of the term "arterio-sclerosis"; secondly to my own observations on the condition; thirdly to a state of the arteries to which I have ventured to apply the term "hypertonus"; and fourthly to the relations of hypertonus to arterio-sclerosis. "Arterio-sclerosis" is not a term of Anglo-Saxon birth; it has come to us from our brethren on the continent of Europe. It is only within recent years that it has come into general use in this country, and if proof of this were wanted it is to be found in the fact that the word does not even occur in the first edition of Fagge's "Principles and Practice of Medicine," published in 1886, or in the sixth edition of Bristowe's "Treatise on the Theory and Practice of Medicine," published in 1887. If those who use the term are asked to define it a considerable variety of reply is given, and it becomes evident that a varied significance attaches to it. Some mean atheroma, others mean fibrous thickening, others mean degeneration, and others mean a combination of all three conditions. If there is any one characteristic which is recognised by all those who use the term that characteristic is thickening or induration of the arterial walls as tested by the condition of the radial artery. Such vague and indefinite notions regarding a common condition are at least unsatisfactory, and as I have had considerable opportunities of studying the condition a brief account of my observations may be of some help in giving the condition a more definite position. Before recording these observations it is, however, necessary to deal with what we may regard as the authoritative definitions and explanations of the term in question.

Historical and pathological.—A historical *résumé* entitled "Étude Clinique sur les Indurations des Artères," by Dr. Nöel Guenean de Mussy, appeared in the *Archives Générales de Médecine* of 1872, p. 129. Dr. de Mussy showed that the condition is common in early and middle life and not necessarily present in old age; and he included atheroma under the term "induration." Ziegler says that "sclerosis in an artery implies the existence of local thickening of its inner coat," and proceeds then to describe atheroma. He was the first to describe in detail and to discuss arterio-sclerotic atrophy of the kidney. He showed that the renal arteries and their branches in aged people are very frequently the seat of sclerotic changes which may simultaneously affect the arteries of other regions also or be confined to the kidney. In this condition the intima of the arteries is notably thickened and the lumen correspondingly narrowed or even obliterated; and he showed that this vascular change in the kidney gave rise to a special form of contraction of the organ which he termed "arterio-sclerotic atrophy."

All the German pathologists may be said to use the term "arterio-sclerosis" to describe atheroma, whatever else they may include under it. Of all the German work, however, there can be no question that it is Thoma's which has specially influenced opinion in this country and in America. To borrow a term from social life, he may be said to have "set the fashion" in the use and interpretation of the term in clinical medicine and, so far as we have been able to find, pathology has not let its voice be heard beyond the lecture-room. Thoma's views may be briefly summarised as follows: the elasticity of the vessel wall becomes reduced in general diseases, acute and chronic infective diseases, long-continued disturbances of general nutrition, by many poisonous substances, and by functional overstraining of arteries from an increase of the heart's action. As a result the lumen dilates and the blood-stream is retarded in the widened vessel. This retardation is the cause of a new formation of connective tissue in the intima of the widened artery. "The new formation of connective tissue in the intima renders the vessel wall more firm so that it appears more rigid and less yielding (arterio-sclerosis, phlebo-sclerosis, angio-sclerosis)."[2] In short, Thoma holds that the thickening of the intima is secondary to a dilatation of the vessel and consequent on slowing of the blood-stream; that the thickening is to compensate for the assumed widening and to restore the equilibrium between lumen and contained blood which had been lost. By this means, he maintains, the rapidity of the blood flow is re-established.

If we turn to the French school we find Lancereaux in 1893 writing on "L'Endartérite ou Artério-sclérose Généralisée."[3] He defines the conditions as a proliferation of the cells of the intima which goes on to fatty degeneration due to failure of nutrition. Huchard[4] mentions the fact that German authors always use the term arterio-sclerosis to signify atheroma of arteries, and he asks whether the terms are absolutely synonymous. His answer is strongly in the negative. He uses the term to designate a general condition of which atheroma is only one of numerous manifestations. These include visceral scleroses—all dominated by a primary chronic inflammation of the small vessels described by many authors as obliterative endarteritis (or endarteriolitis). Arteritis of the small vessels, in short, he considers the anatomical characteristic of arterio-sclerosis (p. 96).

Turning to English works of recent date it is not necessary to go beyond the valuable "System of Medicine" which has been edited by Dr. T. Clifford Allbutt. Here we look for the high-water mark of contemporary medicine, and in Dr. F. W. Mott we find an exponent of the German view of arterio-sclerosis and an adherent of Thoma's views which have already been referred to. He places the term "arterio-sclerosis" as the title of the section and in the introduction to the subject he says that the term "is applied rather loosely to a thickening of the vessel wall. It includes the obvious naked-eye change in the large arteries, named by some authors atheroma; by others, endarteritis deformans. It includes also arterio-capillary fibrosis, a change first described by Gull and Sutton in the walls of the small vessels, which only becomes obvious on microscopic examination." At page 320 he gives as his definition of arterio-sclerosis "a local or general thickening of the arterial wall with loss of elasticity, occasioned mainly by fibrous overgrowth of the tunica intima, secondary and proportional to weakening of the muscular and elastic elements of the media." It seems quite clear that Dr. Mott includes atheroma under the term arterio-sclerosis, and he follows Thoma in asserting that the primary change in atheroma is to be found in a degeneration of the tunica media and that the thickening of the tunica intima is secondary and compensatory to this. He holds with Thoma that the observations made by the latter on paraffin moulds of the aorta prove this without apparently seeing that these moulds may, with equal justice, be held to prove that the atrophy of the media is secondary and compensatory to the hypertrophy of the intima. It is not my purpose at present to elaborate this point, but I would indeed be surprised to find that British pathologists held this to be the order of events in atheroma. For myself I may say that I have no doubt whatever that atheroma is a primary affection of the tunica intima, degeneration and destruction of the media being secondary; in fact, atheroma is so entirely a process by itself that it ought to be allowed to stand in its old position; it seems to me to be quite unnecessary to extend to it the German use of the word "arterio-sclerosis."

Passing from this question of the inclusion of atheroma in arterio-sclerosis we find that Dr. Mott describes a "diffuse arterio-sclerosis" (p. 329) in which the changes begin in the small arteries and capillaries, especially those of the renal cortex, brain, and heart, and are frequently associated with "nodular atheroma" of the aorta. He says that "on

[1] A paper read before the Medico-Chirurgical Society of Edinburgh on May 1st, 1901.

[2] Pathology and Pathological Anatomy, English translation, p. 247

[3] Archives Générales de Médecine, 1893, I., pp. 5 and 164.

[4] Maladies du Cœur et des Vaisseaux, 2ème édition, Paris, 1893.

minute examination the muscle fibres of the media show hyaline swelling, fatty degeneration, or atrophic changes so that the muscular elements are often not recognisable; this is especially the case in the small arteries of the kidney where the wall of the vessel may appear to consist of a homogeneous hyaline tissue. Sometimes the degenerated atrophied fibres of the media can be made out, but nothing of the elastic lamina, the intima being thickened and represented only by a homogeneous hyaline material with but few nuclei." The result of these widespread changes is increased resistance to flow of blood through the capillaries, hypertrophy of the left ventricle, dilatation of larger arteries from degenerative changes in muscular and elastic tissues of the media, slowing of the circulation, and compensatory proliferation of the subendothelial layer of the inner coat" (p. 330). Here, again, Dr. Mott strongly commits himself to Thoma's view. In America Osler, Councilman, and others have committed themselves to Thoma's views.

From the foregoing *résumé* which, while not professing to be exhaustive, may be taken as fairly representative of authoritative views, it is seen that the term arterio-sclerosis is applied to three conditions: (1) to atheroma; (2) to a generalised endarteritis; and (3) to a thickening of the intima compensatory to dilatation of vessels from weakening of their middle coat. This *résumé* could not, however, be regarded as even approximately complete without some reference to the views, expounded by men of eminence, on the relations between granular kidney and the changes in the arteries and heart which accompany granular kidney. In fact, no exposition on arterial changes could suitably ignore this side of the question.

George Johnson (1850-1873) was the first to show that thickening of the muscle coat of the arteries occurred in granular kidney, and he held that the changes in the heart and vessels were secondary to primary kidney changes. Gull and Sutton (1872-1877) propounded the view that there occurred a generalised change or disease in the vessels, to which they gave the name "arterio-capillary fibrosis." The changes in the kidney were regarded as secondary to this vessel fibrosis. Dickinson (1875) held that a growth of fibrous tissue in the kidney was the primary change and that the changes in the vessels were secondary to this. Rosenstein (1881) agreed with Johnson as to the thickening of the muscular coat of the arteries, but thought that the thickening of the intima was inflammatory. Ewald (1881) held that there were two forms of changes in the vessels connected with Bright's disease: first, that in which the kidney was affected primarily and was followed by hypertrophy of the heart and of the muscle coat of the arteries; and, second, that in which disease of the general vascular system was the starting-point of the kidney disease. In this latter there was arterio-capillary fibrosis both in the kidney vessels and in the general vascular system. He thought that it was a question whether such cases should be called "Bright's disease" or not. Dreschfeld and Mahomed (1881) held practically the same view as Ewald, the latter holding in addition that there might be cardio-vascular changes without necessarily renal changes being present in all. Samuel West carried the discussion down to last year and discourses on the old theme as to whether the kidney lesion or the arterial change is the first to appear. He enters a protest against granular kidney being considered partly under vessels and partly under kidney.

Personal observations.—I now ask your attention to my own observations which were conducted on a simple plan. All the cases I examined were seen by me during life. As the radial artery is the vessel which is taken as the type during life I decided to examine it after death. I also usually examined the renal artery, the coronary artery, and the kidney itself. In one case the cerebral nutrient vessels were examined by my friend Dr. Ford Robertson. In this way I have examined so far 16 cases and the results I have arrived at may be stated as follows. 1. Atheroma and arterio-sclerosis are two totally distinct clinical and pathological entities. 2. Atheroma is a localised and patchy affection of the arteries characterised by degenerative changes which have long been recognised. 3. Arterio-sclerosis is a generalised affection of the arteries and is characterised by (*a*) thickening of the tunica media, this thickening being primarily a true hypertrophy, although it may ultimately show some degeneration; (*b*) thickening of the tunica intima from fibrous hyperplasia of the subendothelial connective tissue without atheromatous degeneration; and (*c*) in some instances fibrous thickening of the tunica adventitia. 4. The changes in the arteries *in* the kidneys differ from those in the radial, or even in the renal arteries themselves before they enter the kidneys. They differ in the following respects: in the kidney the thickening of the intima is proportionally greater, the media is not appreciably thickened, it may even be atrophied and may have undergone hyaline degeneration. (The atrophic changes in the kidneys are in proportion to the sclerotic changes in the vessels.) 5. The lumen of the radial arteries and of the arteries in the kidneys is markedly diminished. 6. The changes in the nutrient arteries of the brain, and probably of the cord, correspond with those in the arteries inside the kidneys. 7. Arterio-sclerosis may be associated with more or less atheroma in the same subject.

My cases contradict Thoma's view that the thickening of the intima is compensatory to weakening and yielding of the media. In only one of my cases would the condition of the radial artery lend any support to this view. Fig. 1 represents the radial artery in this case and it will be seen that the vessel has a large lumen, that the muscle coat shows degeneration, and that the intima is thickened. Although this was the condition of the radial artery the changes in the kidney vessels corresponded with the changes in my other cases. Fig. 3 and Fig. 5, which are typical examples, represent the radials from two of my cases and show the small lumen, the thickened media, and the thickened intima. Fig. 4 represents the kidney from the same case as Fig. 3 and shows the marked thickening of the intima without thickening (perhaps even some atrophy) of the media. Fig. 6 represents the kidney from the same case as Fig. 5 and shows the great thickening of the intima, going on to occlusion of the lumen of the vessel, and along with this the atrophy and disappearance of the media as a distinct structure. This case is the one in which Dr. Ford Robertson examined the nutrient arteries in the brain, and the changes in them correspond with the changes here described in the kidney.

In only one of the series which I have examined was there atheroma of the radial artery and in none was there atheroma of the kidney vessels. In some of the cases there was hardly any atheroma of the large arteries. The thickening of the intima in the arteries of the kidney goes on to complete occlusion of the vessels affected; it cannot, therefore, be compensatory in the sense in which Thoma and his followers apply the term. Were it compensatory it should cease with the establishment of compensation.

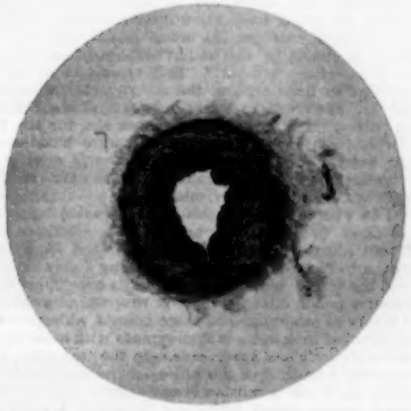
Much of the confusion and difference of opinion which characterise writings on the kidneys and arteries have, I think, arisen from a failure to separate the points of similarity and of dissimilarity in the changes which occur in the arteries inside and outside the kidney. Inside the kidney the changes are most marked in the intima; outside it the changes are most marked in the media. In both, however, the intima is thickened. Inside the kidney the media may disappear and it often atrophies; outside the kidney this never occurs. In two of my cases the change in the radials was almost a pure hypermyotrophy such as Savill described, and it is interesting to note that in one of these there was a diffuse kidney cirrhosis with only slight thickening of the intima of the kidney arteries. Did time permit I might enlarge upon the relations of kidney and arterial change, but this must meanwhile be left. Fig. 2 represents this almost pure hypermyotrophy, and so far as I can at present see this is the only condition which may not be clinically distinguishable or at least not readily distinguishable from arterio-sclerosis.

Clinical aspect of arterio-sclerosis.—If we now turn to the clinical side of arterio-sclerosis the diagnosis rests primarily upon the condition of the radial arteries, supplemented by observations on the temporal and other vessels of corresponding size readily accessible to observation. The condition of the radial artery is taken as an index of the condition of vessels beyond direct examination. When brain, heart, or renal symptoms are present along with changes in the radial they are referred, in the case of the brain and heart, to the condition of the nutrient arteries of these organs. The changes are presumed to be of the same nature. In a case with renal symptoms the condition of the radial artery forms a large part of the foundation warranting a diagnosis of marked kidney change. The vessel is indurated and its wall is thickened; the induration is uniform, and the vessel, as felt upwards along its course, has been compared to whip-cord or to other substances. The truest comparison is to be found in the difference which, to

FIG. 1.

Radial artery showing large lumen, degeneration of media, and thickening of intima. × 16 diameters.

FIG. 2.

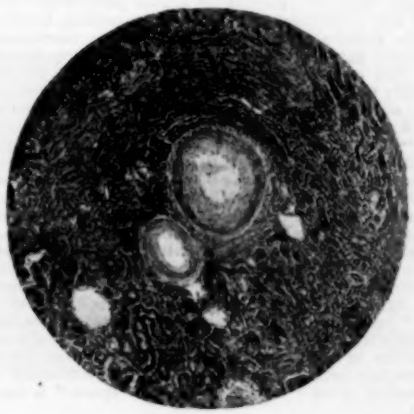


Radial artery showing hypermyotrophy. × 16 diameters.

FIG. 3.

Radial artery showing small lumen, thickened media and intima. × 16 diameters.

FIG. 4.

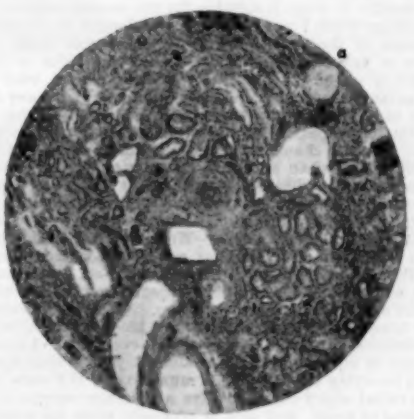


Kidney from same case as Fig. 3, showing sections of two arteries with much thickened intima without corresponding thickening of media. × 50 diameters.

FIG. 5.

adial artery showing small lumen and thickened media and intima. × 16 diameters.

FIG. 6.



Kidney from same case as Fig. 5, showing in centre of field artery with greatly thickened intima and atrophied media. At *a* occluded arteriole. × 50 diameters.

any educated finger, exists between a thin-walled and a thick-walled piece of rubber tubing of the size of an average radial artery. The uniformity of this thickening distinguishes the condition from atheroma where the thickening is irregular and may present areas of calcification. This thickened condition of the radial wall is often spoken of clinically as "high tension." This error has arisen from the fact that in high tension the artery feels cord-like, and thus all cord-like pulses are often loosely spoken of as high-tension pulses. The error is a very grave one, for the thick-walled vessel may have a very low pressure blood-stream; and the word "tension" in this connexion is used as if it were synonymous with pressure and as if the thick vessel always, and necessarily, meant high pressure. Indeed, it would be wise to abandon this word "tension" altogether until it came to be properly applied to a condition of the vessel wall alone and had clearly separated from it any application to blood-pressure. In anything I may say here I shall use the term "blood-pressure" in its correct sense.

Another common clinical error is to speak of a thickened radial artery as atheromatous, there being a widespread idea that thickening in arteries is synonymous with atheroma.

Arterial tonicity and hypertonus.—In the next place I wish to emphasise a feature of the pulse—including therein as is commonly done the condition of the arterial wall as well as the blood wave—which is largely ignored. I refer to the state of contraction of the vessel wall. Relaxation is recognised, in acute pneumonia for instance, and its significance is not overlooked, but is regarded as an indication for certain therapeutic measures. Arterial spasm, on the other hand, is recognised in angina pectoris and in some renal and other diseases. With the exception, however, of certain definite maladies, of which those mentioned are examples, there is little or no attention directed to this factor. The fact of a varying degree of contraction in arteries is really not open to question and the point does not require to be elaborated; in fact, I think that it is the recognition of this which has led to the confusion of the terms "tension" and "blood-pressure." In physiological conditions of perfect health when the arteries are tightened up, that is, contracted beyond their ordinary, the blood-pressure is raised because the vigour of the left ventricle is unimpaired. This heightening of blood-pressure inside a vessel necessarily, then, implies an increase of tension of its wall. On the other hand, a vessel may be tightened up without the blood-pressure being raised. This occurs when there is an accompanying diminution in ventricular force. In a certain sense even this tightening up of a vessel may be spoken of as "tension" (quite apart from the pressure exerted on it's wall by heightening of blood-pressure), but the word is not used in medicine in this sense, otherwise extra contraction of all involuntary muscle, by nervous or other influences, would be spoken of as "tension," whereas "spasm" is the word used.

Spasm, it must be remembered, is only an exaggeration of the normal condition in muscle which is known as "tone" or "tonicity," and it is to this exaggerated tonicity in the vessels that I have ventured to apply the term "hypertonus." The word "spasm" has in medicine too restricted an application to make it suitable for my present purpose. The condition which I have in view is a prolonged or oft-recurring increase of the normal degree of contraction which vessels have in virtue of their muscle coat, and which is physiologically called "tonus." Hypertonus carries with it an important influence on the circulation apart from any alteration in blood-pressure—namely, a diminution in the blood-containing capacity of the vessels from a diminution in their internal diameter. This diminution in lumen necessarily occurs when an active contraction of the vessel wall is present. In diseased conditions it has very important results and determines symptoms of grave significance, to which reference will presently be made.

Recognition of hypertonus.—We have next to inquire how this condition of hypertonus can be recognised clinically. In the first place it can be either recognised, or suspected, by the educated finger. I have recognised the condition for years and acted on its recognition. With the assistance of my friend Dr. Oliphant Nicholson I have, however, been able to demonstrate the existence of this condition. I took cases where by means of the finger alone I judged that there was this recurring hypertonus. I argued that, if I were correct, the radial artery ought to give a diameter varying with the degree of tonus, and this is precisely what we found to be the case. The measurements were made by means of Oliver's arteriometer. By this instrument the diameter of an artery can be determined, and we found that when the vessel to my sense of touch was in the condition of hypertonus its lumen was smaller than when my finger told me that the hypertonus had passed off. We further took sphygmographic tracings from the artery and found that the arteriometer measurement and pulse-tracing helped to explain each other. I do not, however, wish it to be thought that arteriometer and sphygmograph are necessary to enable the clinician to recognise this condition, for they are not.

To illustrate the existence of hypertonus I direct your attention to sphygmographic tracings and arteriometer measurements from four cases.

CASE 1.—A man, aged 35 years, came to me at the Edinburgh Royal Infirmary complaining of headache and general weakness and insomnia. He was a strongly built, well-nourished man, but was somewhat pale. He had been working at his occupation for three months and before that time had been well. The radial artery was markedly thick, the thickening being uniform and extending right up the arm. In fact, it presented the characters which would commonly be described as "arterio-sclerotic." The man was young, and this, combined with his symptoms and the absence of any evidence in the urine of renal disease, led me to surmise that this vessel condition was largely one of hypertonus and that, even assuming that there might be some degree of thickening, his complaints were due to the hypertonus and to the causes producing it. An arteriometer measurement and a sphygmographic tracing were taken and he was admitted into Ward 23. Some doses of erythro-tetranitrate demonstrated that hypertonus was accountable for most, but not all, of the radial thickening; this substance, as is well known, relaxes arterial spasm, but does not, of course, remove an organised thickening, and in this case it greatly reduced the thickening by relaxing the spasm. The arteriometer measurement and the sphygmographic tracings can be compared with the former ones. Tracings 1 and 2 were taken before and after giving erythro-tetranitrate and the arteriometer measurements were 2·3 and 2·7 millimetres. The existence of hypertonus in this case is of special interest, as we found afterwards that the man had had syphilis.

CASE 2.—The next tracings were also from a patient in Ward 23 suffering from spasmodic asthma. He was a man, aged 53 years, and it was quite clear that when the asthmatic spasm supervened his radial arteries became markedly tightened up. The following are the pulse tracings (Tracings 3 and 4) during the asthmatic spasm, and after its relief by means of liquor trinitrina the arteriometer measurements were respectively 2·2 and 2·4 millimetres.

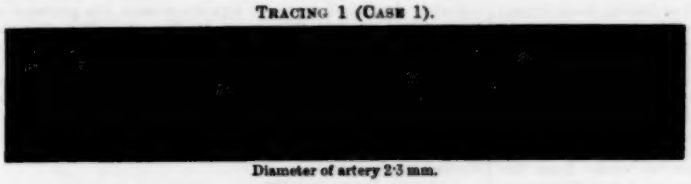
CASE 3.—The next tracings (Tracings 5 and 6) were from a man, aged about 60 years, also in Ward 23, suffering from extreme orthopnœa, believed to be of cardiac origin and due to myocardial degeneration. The vessels were thickened, but they also seemed to me to be in a condition of hypertonus. He got great relief from the administration of anti-spasmodics. The arteriometer measurements were respectively 2·4 and 2·7 millimetres.

CASE 4.—The next tracings are from an old man, aged 70 years, who was under my observation for years in Queensberry House. He was subject in his later years to recurring attacks of "renal asthma," during which his permanently-thickened vessels quite appreciably tightened up and became thicker. The sphygmograph gave the following traces (Tracings 7 and 8) during the attacks and in the intervals, and the arteriometer gave the diameter of the vessel as 2·2 and 2·6 respectively.

In these four cases the difference in the pulse when tightened and not tightened was readily appreciable by the finger. The sphygmograms bear out this, while the arteriometer reading of the diameter of the radials under the two conditions explains the sphygmograms. Under hypertonus the swing of the lever is less, the percussion stroke is shorter and less abrupt, the summit tends to be more rounded, and the predicrotic notch less evident. When the hypertonus passes off all this is altered.

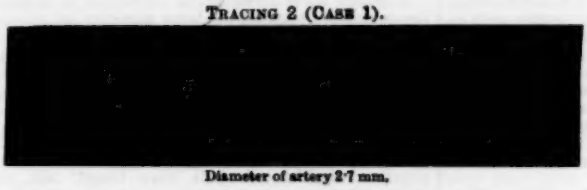
Cases in which hypertonus occurs.—Hypertonus occurs in normal arteries and in sclerosed arteries. It occurs in the young, the middle-aged, and the old. In fact, I would specially impress upon you the fact that even in thickened arteries, showing arterio-sclerosis, this tightening up which I have called "hypertonus" occurs. This combination was present in three or four of the cases from which the pulse tracings were taken. Now if this not only can, but does,

TRACING 1 (CASE 1).



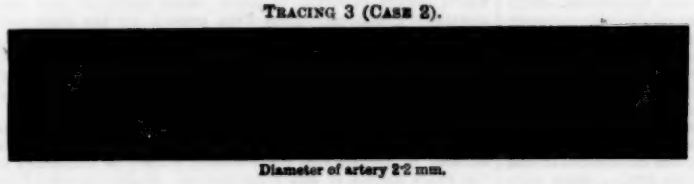
Diameter of artery 2·3 mm.

TRACING 2 (CASE 1).



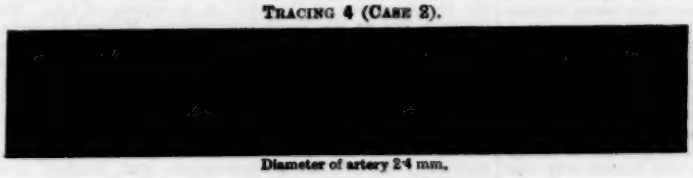
Diameter of artery 2·7 mm.

TRACING 3 (CASE 2).



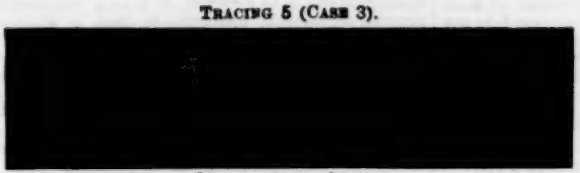
Diameter of artery 2·2 mm.

TRACING 4 (CASE 2).



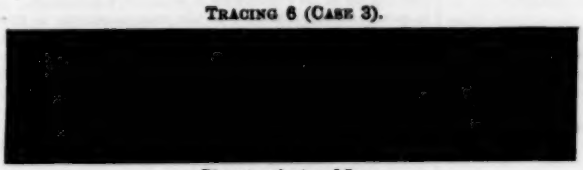
Diameter of artery 2·4 mm.

TRACING 5 (CASE 3).



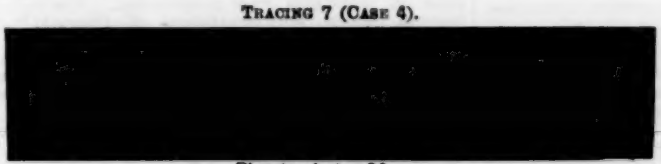
Diameter of artery 2·4 mm.

TRACING 6 (CASE 3).



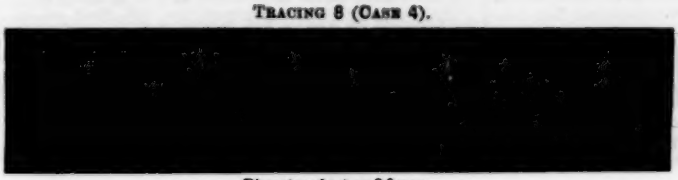
Diameter of artery 2·7 mm.

TRACING 7 (CASE 4).



Diameter of artery 2·2 mm.

TRACING 8 (CASE 4).



Diameter of artery 2·6 mm.

occur, the idea of muscular degeneration, with which the literature on arterio-sclerosis is saturated, and consequent inability on the part of the artery materially to respond to nerve or blood influences must be materially modified. Not only this but the recognition of this element or factor of hypertonus in sclerosed arteries is, indeed, of supreme clinical importance. Did time permit I could illustrate this point with numerous cases with symptoms referable in one case to the brain, in others to the spinal cord, heart, lungs, or kidney. In all the symptoms are mainly attributable to the hypertonus lowering the blood-supply to organs which are already badly supplied by the sclerosed arteries. I shall only briefly refer to three cases.

CASE 5.—The patient was aged 70 years. He had markedly thickened arteries, arcus senilis, and no albumin. He began to be unusually somnolent during the day, his gait became somewhat unsteady and his speech somewhat thick, he could not concentrate his mind, and he noticed that in writing letters he misspelt common words. His arteries were tightened up but the blood-pressure was not high. Under treatment directed to the relief of hypertonus the symptoms entirely passed off and he has continued in good health for nearly two years.

CASE 6.—The patient was a very old but active man who had been rather out of sorts for a week or two. He had thickened arteries and no albumin. He suddenly one day became delirious and was kept in bed. His arteries were tightened up without any increase in his blood-pressure. Under treatment directed to the relief of the hypertonus the delirium became daily less and finally disappeared.

CASE 7.—The patient was a man, aged 60 years, who had been under my observation in Queensberry House since July, 1899. When admitted he had very thick vessels, but there was no albumin in the urine. After admission he had several attacks of "uræmic coma," in each of which I thought he would die. Although his vessels were amongst the thickest I had seen, arteriometer measurements confirmed my observation that even they varied in diameter. Acting on the same lines this man recovered and has not had an attack for over a year.

Cause of hypertonus.—We now come to the question of the cause of hypertonus. The condition can, and does, occur at all ages. In strong people it is associated with, and part of, heightened blood-pressure and a pulse of true high tension.

In aged people with a relatively feeble or failing heart hypertonus does not lead to an increase in blood-pressure but to the reverse. In fact, it is not infrequently the precursor of heart failure. At all ages the condition, in the great majority of cases, is produced by the introduction of poisons into the body or by an auto-intoxication. The question of auto-intoxication is of great interest in this connexion, for it is due to physiological error along one or other of two lines. It may be, and often is, due to physiological errors in primary digestion with the absorption of toxins from the gastro-intestinal tract. In other instances it is due to errors in the processes included under secondary digestion, such as retention of waste matters and imperfect katabolism. The latter occurs in the aged, in gouty and rheumatic people, and in the sedentary. The former is perhaps more common in young adult life. The condition is present, probably, in all diseases in which there is absorption of deleterious substances. It may even be caused by syphilis, and manifest itself, as in one of the cases I have referred to, before there is much permanent thickening of the vessel wall.

Connexion between arterio-sclerosis and hypertonus.—This brings me to the final question as to the relationship between arterio sclerosis and hypertonus. I connect them thus: recurring or continued hypertonus leads to hypertrophy of the muscular media of the arteries under the physiological law that increased action in muscle leads to its hypertrophy. I am not concerned at present to inquire how the increased action is brought about; I content myself by showing its existence. This accounts for the thickened media. The thickened intima is to be explained by the circulation in the blood of deleterious substances of various kinds; these substances act on the subendothelial connective tissue, irritate it, and lead to its hyperplasia. We thus get the completed picture of arterio-sclerosis. The evolution of the changes occupies a varying time in different persons; in some the hypertonus comes early in life, and in early middle age sclerosis is established. In some there is little physiological error, hypertonus is but an occasional occurrence, and sclerosis appears late in life. The capability of the arteries to contract when an excess of toxin is present is in my experience seldom lost, and that is the reason why the recognition of it in sclerosed vessels is a matter of such great practical importance. While for the present I do not deal with the behaviour of the capillaries, it is not to be understood that I ignore their presence, their reactions, or their influence in some of the conditions touched upon in this paper.

Edinburgh.

THE BACTERIOLOGY OF SPORADIC CEREBRO-SPINAL MENINGITIS.

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FOR years the etiology of meningitis was involved in obscurity. The early observations of Murchison, Richardson, and others, suggesting the origin of the disease from articles of diet, telluric influences, &c., have now only a historic interest. The more recent investigations tend to show that micro-organisms play an extremely important rôle in the production of the disease. The early bacteriological investigations, however, are of little value owing to the deficiencies then existing in technique, so that in dealing with the subject at present the investigations of Klebs, Eberth, and others may be passed over.

The first step to determine the exact micro-organismal nature of meningitis was taken by Gaucher[1] who as early as 1881 demonstrated the presence of micrococci in the blood of a patient suffering from meningitis, as well as in the meningeal exudate after death. In 1883 Leyden[2] and Ughetti[3] described, more or less accurately, the presence of large round or oval micrococci in the exudation obtained from the meninges in a case of sporadic cerebro-spinal meningitis. In 1884 these observations were confirmed by Marchiafava and Celli[4] who showed the presence of micrococci not only free in the exudate but also in the protoplasm of the leucocytes forming part of the exudation. In 1886, during an epidemic in Cologne, Leichtenstern[5] invariably found in the meningeal exudation micrococci which he likened to gonococci.

Although these investigators succeeded in demonstrating the invariable presence of large numbers of micrococci in the meningeal exudate and pial tissue, they failed to cultivate them and to determine exactly their etiological significance. This step was taken by Weichselbaum[6] who in 1887 gave the first accurate description of the apparently causative agent at work in the production of the disease. Weichselbaum investigated in all eight cases. In two of these he found diplococci which morphologically resembled pneumococci. In the remaining cases, however, no pneumococcic-like organisms were found, but diplococci which always occurred in pairs, varied much in size, and resembled gonococci. They were present for the most part in the protoplasm of the leucocytes and, what was extremely important, they decolourised when treated by Gram's method of staining. These observations were subsequently confirmed by the extensive researches of Foà and Bordoni-Uffreduzzi,[7] Goldschmidt,[8] Netter,[9] and others.

Although it was admitted by the majority of observers that a diplococcus was invariably found in the meninges in cases of meningitis, considerable difference existed as to the exact nature of the micrococcus. Many regarded it as the pneumococcus of Fraenkel or a variety of this. For instance, Foà at the Tenth International Medical Congress in Berlin in 1890 concluded that this diplococcus, or so-called "meningococcus," was simply a variety of the pneumococcus and could under certain conditions be converted into the latter and *vice versâ*. Righi,[10] Quadù,[11] and other members of the Italian school gave much support to this observation and deduced from their researches that the diplococcus found in cases of meningitis was simply a modified form of the pneumococcus, and, further, that meningitis was to be regarded as a local manifestation of a general diplococcic infection—in fact, a diplococcæmia. Further, the French school, headed by Netter, is also inclined to regard the diplococcus of Weichselbaum as a variety of the pneumococcus. The presence of these micrococci in the cells of the exudate they look upon as evidence of degeneration and phagocytosis, a view which is improbable in the light of recent research. They are supported in their observations by the work of Lenhartz,[12] Hunermann,[13] Vincenzi,[14] and others.

It is admitted that the pneumococcus may produce a meningitis or be present as a secondary infection. And this is not at all remarkable, as the pneumococcus is now known to be an organism of wide distribution. The fact, however, that meningitis often complicates pneumonia, or *vice versâ*, is no criterion that the pneumococcus is the specific agent at work in the production of the disease—cerebro-spinal meningitis—as we know it in its epidemic and sporadic forms. In reality there is every reason to believe that the diplococcus described by Weichselbaum is something very different. Further, there is much reason to doubt whether the cocci described by those who have investigated cases of meningitis were pneumococci. Kamen,[15] for instance, quotes the observations of Panienski[16] who reported in all 13 cases as due to pneumococcus, but advanced insufficient evidence to prove conclusively that the micro-organisms in question were in reality pneumococci. During the last few years the original researches of Weichselbaum have received much support and confirmation. The

[1] Gazette Médicale de Paris, 1881, No. 10.
[2] Zeitschrift für Klinische Medicin, Band vi., 1883.
[3] Giornale della Societa Italica d'Igiene, 1883.
[4] Gazzetta degli Ospedali.
[5] Deutsche Medicinische Wochenschrift, 1886.
[6] Fortschritte der Medicin, 1887, Band v., pp. 18 and 19.
[7] Deutsche Medicinische Wochenschrift, 1886, Band xii., p. 15, and Zeitschrift für Hygiene, 1888, Band iv., p. 1.
[8] Centralblatt für Bakteriologie, 1887.
[9] La France Médicale, June, 1889.
[10] La Riforma Medica, 1890, No. 146.
[11] Ibid., 1890, Nos. 157, 158, 183, 184.
[12] Verhandlungen des 15. Congresses für Innere Medicin zur Berlin, 1897, p. 326.
[13] Zeitschrift für Klinische Medicin, Band xxxv., p. 436.
[14] Centralblatt für Bakteriologie, Band xxvi., 1900, p. 561.
[15] Ibid., Band xxiv., p. 545.
[16] Deutsche Militärische Zeitschrift, Hf. 8 and 9.

observations of Jaeger[17] in 1895, Heubner,[18] Councilman, Mallory and Wright,[19] and Osler[20] advance extremely strong evidence in favour of the view that Weichselbaum's diplococcus is the specific agent at work in the production of cerebro-spinal meningitis in its epidemic and sporadic forms. Heubner, for instance, was able to reproduce the same train of symptoms and pathological changes in goats by injection subdurally of pure cultures of this micro-organism isolated from cases of cerebro-spinal meningitis in man.

From this review of the most important literature it is at once evident that even at present considerable difference of opinion exists as to the exact nature of the micrococci found in the meningeal exudate in cases of meningitis. Apart from the fact that cases of meningitis may under certain conditions be due to a great variety of micro-organisms, as staphylococci, streptococci, bacillus influenzæ, bacillus typhosus, bacillus coli, &c., the positions taken by the leading authorities at present may be said to be the following: the French doctrine, that cerebro-spinal meningitis in its epidemic or sporadic form may be caused either by the pneumococcus or the diplococcus intra-cellularis of Weichselbaum; the German and American doctrine, that the diplococcus intra-cellularis meningitidis of Weichselbaum is, in all probability, the specific agent in epidemic or sporadic cerebro-spinal meningitis, the pneumococcus being of secondary importance. In 1898 Still,[21] in two interesting articles on Posterior Basal Meningitis in Children, was inclined to regard this disease as merely a sporadic manifestation of cerebro-spinal meningitis. His conclusion was supported by the bacteriological examination of a number of cases in which he found the invariable presence of intra- and extra-cellular diplococci. These diplococci resembled morphologically the diplococcus intra-cellularis meningitidis described by Weichselbaum. Up to the present time Still's observations have received no confirmation. His conclusion that posterior basal meningitis is simply a sporadic manifestation of cerebro-spinal meningitis and is caused by Weichselbaum's diplococcus certainly warrants further investigation as his results when developed will clear up many points in regard to sporadic meningitis and its relation to the disease in its epidemic form.

Recently we have had the opportunity of examining bacteriologically cerebro-spinal fluid obtained by lumbar puncture from nine cases of meningitis in children and from one case in a young adult. It was difficult from a clinical point of view to determine the exact nature of these cases of meningitis—in fact, it was impossible to say with any degree of certainty whether they were simple or tuberculous. On this account lumbar puncture was performed and the results of the bacteriological examination of the cerebro-spinal fluid obtained from these cases proved of the utmost value in regard to the determination of the exact nature of the morbid process present.

At this point we would like to express our gratitude to Dr. Percy Kidd, Dr. Gilbart Smith, Dr. Warner, and Dr. Sansom for their kindness in allowing us to make use of the cases clinically, and to Dr. Schorstein and Dr. Hadley for the large amount of pathological material which they have freely placed at our disposal.

CASE 1.—The patient, a girl, aged seven years, was admitted on Feb. 17th, 1901. She had been ill for six days, suffering from headache, restlessness, and incontinence of urine. Her temperature on admission was 104° F., the pulse-rate being 148, and the respirations 36. There were marked retraction of the head, twitching movement of the facial muscles of the right side with left facial paralysis, and strabismus. The fundi were normal; later, spasmodic movements of the left arm set in. Kernig's sign was present. Death from exhaustion took place on Feb. 22nd. At the post-mortem examination extensive and scattered purulent exudation over the hemispheres with a large amount of purulent lymph in the inter-peduncular space was found. There was a large quantity of clear fluid in the ventricles. Over the whole length of the spinal cord there was a considerable amount of purulent exudation. The lungs showed marked broncho-pneumonia. The other organs appeared to be healthy. There was no evidence of tubercle.

Lumbar puncture was performed a day or two before death. The fluid obtained was turbid and after centrifugalisation the deposit was examined microscopically for micro-organisms. Diplococci were found in fairly large numbers. Many occupied an intra-cellular position. They did not retain the stain well by Gram's method and decolourised completely by Claudius's method. A well-marked capsule was present. Considerable quantities of the fluid were transferred to tubes containing blood-serum, ascitic fluid bouillon, and glycerine agar and were incubated at 37° C.

CASE 2.—The patient was a boy, aged three years, who was admitted on Jan. 30th, 1901. He had been ill for two months with progressive emaciation and frequent attacks of "cramp." The following was his condition on admission. There were marked cervical opisthotonos and strabismus, but no optic neuritis, aural discharge, or convulsions. The knee-jerks were exaggerated. There was incontinence of urine and fæces. Death occurred from exhaustion on March 4th. Post mortem there was found to be slight milky opacity of the meninges over the base, but there was no marked exudation. The ventricles were much distended with clear fluid. The other organs were healthy and there was no evidence of tubercle.

Lumbar puncture was performed on Feb. 25th. The fluid obtained was clear. After centrifugalisation the deposit was examined microscopically and was found to contain leucocytes and intra- and extra-cellular diplococci. Tubes of ascitic fluid bouillon, blood-serum, and glycerine agar were inoculated with large quantities of the fluid and were incubated at 37° C.

CASE 3.—The patient, a girl, aged two and a half years, admitted on Feb. 14th, 1901, had been ill for two months with wasting, nausea and vomiting. Her condition on admission was one of great emaciation. There was no rigidity, retraction of the head, or paralysis, but there was apparent hyperæsthesia of the legs. She was semi-comatose. Later there were strabismus and nystagmus, but no optic neuritis, rigidity of the arm, or convulsions. Kernig's and Babinsky's signs were present. Death from exhaustion resulted. A considerable quantity of blood-stained and opalescent fluid was found post mortem in the meningeal spaces. Over the basal and posterior parts of the brain and the ventral surface of the cerebellum there was extensive purulent exudation. The cerebral convolutions were pale and flattened, the meninges covering them showing no change. There was extreme hydrocephalus. The meninges covering the spinal cord, especially over the posterior columns, showed the presence of marked exudation and congestion. The other organs appeared to be healthy and there was no evidence of tubercle.

Lumbar puncture was performed on Feb. 27th. The fluid obtained was clear. The deposit obtained by centrifugalisation showed the presence of many diplococci, both intra- and extra-cellular, all of which possessed a marked capsule. Tubes of blood-serum, ascitic fluid, bouillon, and glycerine agar were inoculated with considerable amounts of the fluid and were incubated at 37° C.

CASE 4.—The patient, a male infant, aged four months, admitted on March 2nd, 1901, had been for five weeks suffering from convulsions and retraction of the head. After admission there were constant diarrhœa and vomiting and marked cervical opisthotonos. There was bulging of the fontanelle. There was no strabismus, nystagmus, or optic neuritis. Kernig's sign and Babinsky's sign were present. Since admission no convulsions had occurred.

Lumbar puncture was performed on March 8th. The fluid obtained was clear. After centrifugalisation the deposit was stained with methylene blue. Capsulated diplococci were present, most of them being intra-cellular. They decolourised by Gram's method. Cultures were made exactly as in the previous cases.

CASE 5.—The patient was a girl, aged six years, who was admitted on March 8th, 1901. She had been suffering for 10 days from headache, vomiting, and general irritability. On the day of her admission she had a convulsion which was followed by coma. When admitted the patient was comatose and her temperature was 101° F. The pupils were dilated and there were strabismus and nystagmus, but no optic neuritis was present. The head was turned to the left. There were rigidity and rhythmic movements of the left arm and leg, but there was no rigidly of the neck. Kernig's sign was present. There was incontinence of urine and fæces. Later retraction of the head developed, with coma and slight optic neuritis. These symptoms became progressively worse and death occurred on March 13th. Post-mortem examination

[17] Zeitschrift für Hygiene, Band xix., 1895.
[18] Deutsche Medicinische Wochenschrift, Band xxvi., p. 423.
[19] Report of the State Board of Health of Massachusetts, Boston, 1898. American Journal of Medical Sciences, vol. cxv., p. 262.
[20] Cavendish Lecture, London, June, 1899.
[21] Journal of Pathology and Bacteriology, 1898, p. 147, and Brit. Med. Jour., October, 1898.

TABLE I.—CHARACTERISTICS OF THE DIPLOCOCCI FOUND IN THE CEREBRO-SPINAL FLUID.

—	Case 1.	Case 2.	Case 3.	Case 4.	Case 5.	Case 6.	Case 7.	Case 8.	Case 9.	Case 10.
Microscopic appearances	Cocci in pairs, tetrads or short chains, coffee-bean shaped. Division parallel to long axis of cocci.	Cocci in pairs or tetrads, very variable in size. Division parallel to long axis of cocci.	Cocci in pairs, and short chains, variable in size, especially in cultures. Division parallel to long axis of cocci.	Cocci in pairs, tetrads, or short chains, variable in size, coffee-bean shaped like other cases. Division as others.	Cocci in pairs or short chains, variable in size and shape, especially in cultures. Division as in other cases.	Cocci in pairs, tetrads, or short chains, very variable in size and shape, especially in cultures. Division as in other cases.	Cocci in pairs, tetrads, or chains (short), very variable in size and shape, especially in cultures. Division as before.	Cocci mostly in pairs, variable in size, coffee-bean shaped. Division as in other cases.	Cocci in pairs, tetrads, or short chains, size, and shape variable. Division as in other cases.	Cocci in pairs or short chains, very variable in size, especially in cultures. Division as in other cases.
Staining Characteristics	Good with fuchsin and methylene blue. Gram-Weigert + Claudius −	Good with fuchsin. Gram-Weigert − Claudius +	Good with fuchsin. Gram-Weigert + Claudius +	Good with ordinary dyes. Gram-Weigert − Claudius −	Good with ordinary dyes. Gram-Weigert − Claudius −	Good with ordinary dyes. Gram-Weigert − Claudius −	Good with ordinary dyes. Gram-Weigert − Claudius −	Good with fuchsin. Gram-Weigert + Claudius +	Good with ordinary dyes. Gram-Weigert + Claudius +	Good with ordinary dyes. Gram-Weigert −
Capsule	+ Also in cultures.	+ Also in cultures.	+ Also in cultures.	+ Also in cultures.	+ Also in cultures.	+ Also in cultures.	+ Also in cultures.	+ Also in cultures.	+ Also in cultures.	+
Relation to temperature	Best at 37° C., faint at 22° C.	Best at 37° C., faint at 22° C.	Best at 37° C., faint at 22° C.	Best at 37° C., faint at 22° C.	Best at 37° C., faint at 22° C.	Best at 37° C., faint at 22° C.	Best at 37° C., faint at 22° C.	Best at 37° C.	Best at 37° C., faint at 22° C.	Best at 37° C.
Gelatin	Minute, delicate grey-white colonies, no liquefaction.	Delicate white colonies, no liquefaction.	Extremely delicate, if any.	Minute grey-white colonies, no liquefaction.	Fine white colonies, no liquefaction.	Delicate white colonies, no liquefaction.	Delicate greyish-white colonies, no liquefaction.	Extremely little growth, no liquefaction.	As in Case 8.	Delicate grey-white colonies, no liquefaction.
Agar-agar	Delicate, grey-white colonies irregular in shape, opaque periphery	Delicate, greyish colonies, become very transparent, otherwise like Case 1.	Greyish-white colonies, moist and tenacious, colonies run together, luxuriant growth.	Delicate greyish-white colonies, like Cases 1 and 2.	Fine greyish-white colonies like Cases 1 and 2.	Fine greyish-white colonies like Cases 1 and 2.	Fine greyish-white colonies, like Case 6	Luxuriant growth. Greyish-white, colonies run together.	As in Case 8.	Delicate greyish-white colonies.
Glycerine Agar	Same as agar, only more luxuriant.	Same as agar, more luxuriant.	Same as agar, very luxuriant.	Same as agar.	Same as agar.	Same as agar.	Same as agar, only more luxuriant.	Same as agar.	Same as agar.	Same as agar, only more luxuriant.
Bouillon	Slight turbidity.	Very slight turbidity.	Good growth, darkened in colour.	—	No turbidity, yet good growth.	No turbidity, good growth.	Growth, slight turbidity.	Good growth, marked turbidity.	Good growth.	Very slight turbidity.
Ascitic fluid bouillon	Luxuriant growth, cloudy.	Good growth, cloudy.	Luxuriant growth.	Good growth, slight cloudiness.	Luxuriant growth.	Good growth.	Growth, viscidity of blood.	Luxuriant growth.	As in Case 8.	Good growth.
Stiffened blood-serum	Good growth, colonies very transparent and greyish-white.	Good growth, greyish-white delicate colonies.	Good growth, white porcelain-like colonies, no liquefaction.	Good growth, colonies very transparent.	Very transparent colonies, greyish-white and irregular in outline.	Delicate greyish-white colonies like Case 1.	Good growth, colonies very transparent.	Good growth, no liquefaction.	As in Case 8.	Good growth, grey-white colonies, no liquefaction.
Milk	Growth, no change.	—	Growth, no change.	—	—	—	—	—	—	Growth, no change.
Litmus	Growth, no acid production.	—	Growth, no acid production.	—	—	—	—	—	—	Growth, no acid production.
Potato	No apparent growth.	—	Slight v'acid growth.	—	—	—	—	—	—	—
Length of life	Cocci abundant. At least 40 days.	At least 30 days.	—	—	—	—	—	—	—	—
Presence of other micro-organisms	—	A minute, non-motile, non-Gram staining bacillus. Probably bacillus influenzæ.	—	A minute bacillus as in Case 2. Very like bacillus influenzæ.	Staphylococcus albus and citreus also present.	Tubercle bacilli. Marked tuberculous meningitis.	—	Large capsulated non-Gram staining bacillus, also probably bacillus influenzæ.	Staphylococcus albus and aureus and large non-Gram staining bacillus.	—
Experimental inoculation	*White mouse:* ½ c.c. of 48-hours' ascitic fluid culture intra-peritoneally; *no result.* *Guinea-pig:* 1 c.c. of same subcutaneously; *no result.* *Guinea-pig:* 1 c.c. of same intra-peritoneally; *no result.*	*White mouse:* ½ c.c. of 48-hours' emulsified agar culture intra-peritoneally; *no result.* *Guinea-pig:* 1 c.c. of same subcutaneously; *no result.* *Guinea-pig:* 1 c.c. of same intra-peritoneally; *no result.*	*White mouse:* ½ c.c. of 48-hours' bouillon culture intra-peritoneally; *no result.* *Guinea-pig:* 1 c.c. of same subcutaneously; *no result.* *Guinea-pig:* 1 c.c. of same intra-peritoneally; *no result.*	*White mouse:* ½ c.c. of 48-hours' ascitic fluid culture intra-peritoneally; *no result.* *Guinea-pig:* 1 c.c. of same subcutaneously; *no result.* *Guinea-pig:* 1 c.c. of same intra-peritoneally; *no result.*	*White mouse:* ½ c.c. of 48-hours' emulsified agar culture intra-peritoneally; *no result.* *Guinea-pig:* 1 c.c. of same subcutaneously; *no result.* *Guinea-pig:* 1 c.c. of same intra-peritoneally; *no result.*	—	—	—	—	*White mouse:* 1 c.c. of 48-hours' ascitic fluid culture intra-peritoneally; *no result.* *Guinea-pig:* 2 c.c. of same intra-peritoneally; *no result.* *Rabbit:* 2 c.c. of same intra-peritoneally and subcutaneously; *no result.*

showed marked congestion of, and exudation into, the meninges, especially over the basal regions of the brain. There was no marked exudation over the cerebral hemispheres. The ventricles contained an excess of clear fluid. There was no evidence of tubercle in the cranial cavity. The pericardium contained an excess of blood-stained fluid. Its surface was granular owing to the presence of large numbers of small, sharply defined, greyish-white nodules which proved to be tuberculous. The neighbouring mediastinal lymph glands were the seat of marked caseation and from them the tuberculous process could be traced to the pericardium. The lungs were slightly œdematous. There was no evidence of tubercle. The other organs were apparently healthy.

Lumbar puncture was performed on the day on which the patient was admitted and it was followed by improvement in the general condition which lasted for a few hours. The deposit obtained after centrifugalisation of the fluid contained diplococci as in the previous cases. Cultures were made as before.

CASE 6.—The patient, a boy, aged one year and nine months, was admitted on March 13th, 1901. He had been ill for three months and had suffered from cough, general irritability, and retraction of the head. There was a history of congenital syphilis. On admission the child had convulsions, retraction of the head, a bulged fontanelle, and spasmodic movements of the left arm and leg. Kernig's sign was present, but there was no strabismus or optic neuritis. The condition of the patient became rapidly worse and death took place on March 17th from exhaustion. Post mortem there was found to be considerable exudation into the meninges over the basal and posterior parts of the brain, but there was little or no change in the meninges over the cerebral hemispheres. The meninges around the basal and posterior parts of the brain were crowded with small grey tubercles. The ventricles contained an excess of lymph-like fluid. The thoracic and abdominal organs were the seat of an advanced miliary tuberculosis.

Lumbar puncture was performed on March 14th. No diplococci were found on examination of the fluid immediately after it was withdrawn. The fluid was therefore incubated at 37° C. for 24 hours, after which diplococci were found in considerable numbers. Cultures were made as before.

CASE 7.—The patient was a female infant, aged three months, who was admitted on March 12th, 1901. The illness had lasted for five weeks with wasting and cough. Convulsions and vomiting had been present for a week before admission. On admission there were retraction of the head and strabismus but no optic neuritis. Kernig's sign was present.

Lumbar puncture was performed on March 15th. No diplococci were found in the fluid immediately after withdrawal. As in the preceding case, the fluid was incubated at 37° C. for 24 hours, after which microscopical examination of the deposit showed the presence of many capsulated diplococci. Cultures were made as before.

CASE 8.—The patient, a boy, aged one year, was admitted on Feb. 28th, 1901. He was suffering from bronchopneumonia. A week after admission strabismus, retraction of the head, and general rigidity developed. Kernig's sign was present.

Lumbar puncture was performed on March 15th. The fluid obtained was incubated at 37° C. for 24 hours, after which diplococci were found as in the other cases. Further, a large capsulated and rod-shaped micro-organism and a small, non-motile bacillus were found. Like the diplococci, they did not retain the stain by Gram's method. Cultures were prepared as before.

CASE 9.—The patient, a female infant, one month old, was admitted on March 11th, 1901, suffering from convulsions. Death took place three hours after admission. Post mortem there was found to be extensive purulent exudation into the meninges over both cerebral hemispheres. The ventricles were distended with fluid. The exudation was examined bacteriologically at once and was found to contain diplococci, many of which were intra-cellular. Cultures were made as in other cases.

CASE 10.—The patient was a woman, aged 38 years, who was admitted on March 29th, 1900, complaining of headache, vomiting, and rash on the arms and legs. On admission there was marked retraction of the head. No convulsive movements were present, nor was there strabismus, optic neuritis, paralysis, or anæsthesia. While under observation she had repeated attacks of pain in the head and the back, accompanied by marked retraction of the head, profuse perspiration, inequality of the pupils, and delirium. The symptoms gradually improved and the patient was discharged on June 9th.

Lumbar puncture was performed on May 31st by Mr. F. S. Eve and from the fluid obtained numerous intra- and extracellular diplococci were found. Cultures were made as in the other cases.

Further details with regard to all of the foregoing cases are given in Table I. which is a short summary of the morphological and biological characteristics of the diplococci found in the cerebro-spinal fluid obtained from the cases.

From this table it is evident that there exist two more or less definite varieties of diplococci which from their staining reactions and cultural peculiarities may be distinguished from each other:—

TABLE II.

—	Type A.	Type B.
Staining characteristics	Gram-indefinite, usually negative.	Gram-positive.
Agar and glycerine agar	Growth extremely delicate; colonies are very transparent.	Growth luxuriant; colonies are viscid and tend to run together.
Gelatin	Growth very delicate; no liquefaction.	Growth slight, if any; no liquefaction.
Bouillon	Growth slight.	Growth good; marked turbidity.
Stiffened blood serum	Growth resembles that on agar.	Growth good; colonies porcelain-like.
Potato	Slight growth; invisible.	Growth good; viscid.
Cases	1, 2, 4, 5, 6, 7, 10.	3, 8, 9.

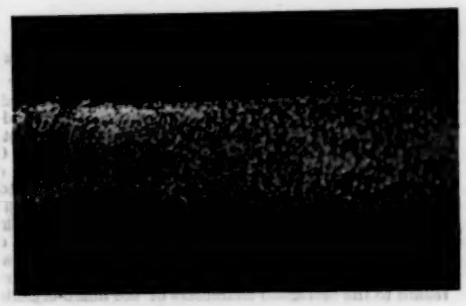
These results correspond more or less accurately with the descriptions given recently by Pfaundler[22] who distinguished two distinct varieties of diplococci in the cases which he examined. He tabulated the micro-organisms

FIG. 1.

Type A, growth on agar, 48 hours old.

described by previous investigators and found that they could be grouped under two heads. Thus, the diplococci found by Weichselbaum, Bernheim and Moser, and Councilman and Pfaundler (three cases) formed one group, the

FIG. 2.



Type B, growth on agar, 48 hours old.

[22] Jahrbuch für Kinderheilkunde, Band xlix., 1899, p. 254.

characteristics of which correspond almost exactly with our Type A, while those diplococci described by Jaeger, Heubner, Urban, Still, and Pfaundler (two cases) formed a second group which corresponds with our Type B.

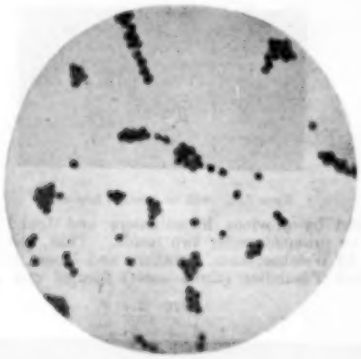
Although the diplococci found by us are easily divisible into two groups, we have every reason to believe that they represent probably one and the same micro-organism.

FIG. 3.

Polymorpho-nuclear leucocyte containing diplococci.

Morphologically no point of distinction is to be made out. Their resemblance to gonococci, their extreme variability in size and shape, combined with the invariable presence of a marked capsule even in cultures, all point to their similarity. The fact that the majority of strains (Cases 1, 2, 4, 5, 6, 7, and 10) present extreme delicacy in growth on such media as agar, glycerine agar, and blood

FIG. 4.



Diplococcus intracellularis in pure culture, stained by Gram's method.

serum, &c., and that the remaining strains (Cases 3, 8, and 9) grow more luxuriantly on the above-mentioned media, does not seem to warrant us in drawing any absolute distinction between the two varieties or in disproving their identity. Our own results would rather seem to show that they are one and the same micro-organism, and that the differences noted in the types described are only those which are constantly being met with in the fuller knowledge of any micro-organism. Further, the cases presented no corresponding points of distinction clinically, and we are inclined to agree with Pfaundler that, although slight differences are to be observed in regard to the biological characters of the micro-organism, they are without influence on the course of the disease.

A point of extreme interest in regard to those diplococci is the constant negative result obtained by experimental inoculation. Even although large doses of living cultures of the diplococci were introduced intra-peritoneally as well as subcutaneously into mice, guinea-pigs, and rabbits, absolutely no lethal result was obtained. Unfortunately we did not have it in our power to extend the interesting results obtained by Heubner who succeeded in producing an undoubted cerebro-spinal inflammatory process by subdural inoculation in goats of diplococci isolated from cases of cerebro-spinal meningitis in man. Although we have always succeeded in isolating the diplococcus, in only four of the cases has it been present in pure culture. The following is a summary of the results which we have obtained. In four cases (Cases 1, 3, 7, and 10) the diplococcus was present in pure culture. In three cases (Cases 2, 4, and 8) the diplococcus was associated with a bacillus which from its morphological and staining characteristics we are inclined to regard as the bacillus influenzæ Pfeiffer. In two cases (Cases 8 and 9) the diplococcus was associated with a large capsulated bacillus which morphologically and biologically agreed with the descriptions given by Centanni and Neumann[23] of a bacillus called "bacillus meningitidis," and found by them in the meningeal exudate in cases of meningitis. In two cases (Cases 5 and 9) the diplococcus was associated with ordinary pyogenic cocci, probably the result of accidental contamination. In one case (Case 6) the diplococcus was associated with the bacillus tuberculosis.

These results are in entire harmony with the observations of other investigators. The association of a bacillus which from our researches we have reason to believe was the bacillus influenzæ with the diplococcus intra-cellularis is interesting. Although Pfuhl,[24] Nauwerk,[25] Högerstedt,[26] Leichtenstern,[27] and others have demonstrated the presence of Pfeiffer's bacillus influenzæ in the meningeal exudate in cases of suppurative meningitis and even go so far as to believe in the existence of a specific form of meningitis—meningitis grippalis—only two cases have been reported up to the present where this micro-organism has been demonstrated by lumbar puncture—one by Slawyck,[28] a case of general influenzal infection, lumbar puncture being performed owing to the severity of the meningeal symptoms the other by Lander[29] who investigated a similar case.

Within recent years it has been shown that the association of the diplococcus intra-cellularis with the bacillus tuberculosis is by no means uncommon. Since Holdheim[30] demonstrated this fact quite a large number of confirmatory and detailed accounts have been given—notably by Heubner,[31] Lenhartz,[32] Netter,[33] and quite recently by Pfaundler. Not only have some of these observers found this association in the meningeal exudation post mortem, but also in the cerebro-spinal fluid obtained by lumbar puncture during life. In our case there was no question as to the existence of a general tuberculosis. The liver, the spleen, the lungs, and the kidneys were crowded with typical miliary tuberculous nodules and the meninges, especially around the posterior and basal parts of the brain, were the seat of a definite tuberculous process. This case clearly shows the importance of making a thorough bacteriological investigation during life as well as post mortem. If no such examination had been undertaken the case would undoubtedly have been regarded as an uncomplicated case of tuberculous meningitis. The examination of the cerebro-spinal fluid during life combined with that of the meninges post mortem, however, conclusively proved that the case was one of mixed infection.

In Case 5 an interesting result was obtained post mortem. Lumbar puncture was made during life and the cerebro-spinal fluid was found to contain large numbers of typical diplococci. Post mortem the meninges showed the expected posterior and basal exudation. No evidence of tubercle was present. On examining the thorax, however, the pericardium was found to be the seat of a marked tuberculous process and the neighbouring mediastinal lymph glands were the seat of caseation. From the latter the tuberculous process could be traced to the pericardium. The other organs were healthy.

In conclusion we would urge the following: 1. That in all

[23] Migula.
[24] Zeitschrift für Hygiene, Band xxvi.
[25] Centralblatt für Bakteriologie, Band xviii., p. 396.
[26] Högerstedt. Cited by Netter.
[27] Nothnagel's Pathologie und Therapie, 1898, Band iv., p. 123.
[28] Zeitschrift für Hygiene, 1899, Band xxxii., p. 443.
[29] Jahrbuch für Kinderheilkunde, 1901, p. 91.
[30] Deutsche Medicinische Wochenschrift, 1896.
[31] Ibid., 1897. [32] Ibid., 1897.
[33] Twentieth Century Practice of Medicine, vol. xvi.

the cases of meningitis examined by us a diplococcus has been isolated from the cerebro-spinal fluid. In nine of these the fluid was obtained by lumbar puncture during life. 2. That this diplococcus has the same morphological and biological characteristics as Weichselbaum's diplococcus intracellularis meningitidis. 3. That in some cases the diplococcus was present in pure culture, in others associated with other micro-organisms—e.g., bacillus influenzæ and bacillus tuberculosis. 4. That the clinical picture and the pathological changes found in these cases are those met with in so-called "posterior basal meningitis." 5. That in all probability "posterior basal meningitis" is simply a sporadic manifestation of cerebro-spinal meningitis and is produced by the same micro-organism—namely, the diplococcus intracellularis meningitidis.

ON THE OPERATIVE TREATMENT OF CORNEAL ASTIGMATISM.

BY A. BREUER, M.D. FREIBURG, M.R.C.S. ENG., L.R.C.P. LOND.

THE changes in curvature of the cornea resulting from operations—e.g., extraction of cataract, iridectomy, &c.—are well known. Although these changes are lessened as time goes on, still a very considerable part of them remains permanent. In the now often practised operation for high myopia the ophthalmic surgeon has taken care so to localise the incision as to produce the minimum of astigmatism, or if a marked degree of astigmatism was present before the operation to diminish it by the incision.

Several authors (Bates,[1] Pflüger,[2] Lucciola[3]) have attempted to cure astigmatism by corneal incisions with the keratome or with a Graefe's knife. The incisions were usually made at one or both ends of the meridian of stronger refraction. In some cases the astigmatism became less and even disappeared completely. Similar observations were made by Bocci[4] and Laus[5] in the rabbit. The last-named author studied the effects of a perforating wound made with the keratome and of a non-perforating wound made with the galvano-cautery, advocating the latter. Reymond[6] studied the effect of incisions in the limbus corneæ and of sub-conjunctival scarification of the sclera (from three to four millimetres behind the limbus). He collected his results as follows. The result of an incision depends on its location, whether in the sclera, the limbus, or the periphery of the cornea. The curvature is always changed in both meridians, the one which contains the incision and the one perpendicular to it. Incisions in the outer border of the limbus corneæ and sclera generally produce an increase of curvature in the corresponding meridian, those in the clear cornea a decrease of curvature (lengthening of the corneal radius.)

Within the last three years I have always noted the refraction of the cornea in the visual line in the two principal meridians before and after any operation by means of Javal's ophthalmometer (Kagenaar, Utrecht). Without a single exception I found that corneal incisions made, for instance, in the vertical meridian lessen the refraction of that meridian and increase at the same time that of the horizontal. If the incision is made in the limbus or still a little further peripherally, as in iridectomy for glaucoma, the effect is small; the more the incision approaches the centre of the cornea the greater the effect. All my observations were made on eyes free from any apparent previous disease such as trachoma, scrofulosis, ulcers, &c. In order to study the changes more closely I measured the curvature of the cornea not only in its visual centre, but in points 5°, 10°, and 15° distant from it along the principal meridians. In representing these measurements by a curve I followed Sulzer's[7] suggestion. He recorded his measurements in the so-called "diagramme dioptrique." First he measures the refraction of the two principal meridians (mostly vertical and horizontal) at the point where the visual line passes through the cornea while the patient looks at the centre of the ophthalmometer. Next the patient is asked to look in succession at points situated in the principal meridians at 5°, 10°, and 15° towards the nasal and temporal side, above and below the axis of the ophthalmometer. We can utilise as an object for fixation the division on the keratoscopic disc of Javal's ophthalmometer (model 1889), or white dots can be marked on a piece of wire fixed to the instrument in the principal meridians at 5°, 10°, and 15° from its axis. As the reflected corneal images become too indistinct when measuring beyond 20° from the centre only a small central part of the cornea can be represented in this manner. A distance of 15° is considered quite sufficient by Sulzer (15°=2 millimetres in corneæ of medium refraction). For each of the above points the refraction is measured by bringing the two central images in contact in the centre of the vision-field of the instrument; the number of dioptres is read off on the division of the arc. The measurement will become plain in the accompanying diagrams. The horizontal (abscissa) of the two intersecting straight lines serves as a basis for the diagram of the horizontal meridian or that which is nearer to the horizontal one. The figures 5 10, 15, show the distance in angles of the points measured from the visual line of the cornea. Each division on the vertical line represents one dioptre. For simplification the figure 40 (dioptres) is placed at the intersection of the vertical and horizontal lines; therefore the refraction of the points measuring more than 40 D. is marked above, and that of those measuring less than 40 D. below, the horizontal axis. The observations for the temporal half of the right eye are marked on the right side of the diagram, those for the nasal half on the left side. For the left eye the marking is reversed, so that the diagram represents the cornea as the patient would see it in a plane mirror. After having marked the refraction for the different points measured these marks are united by a plane curve. In order to register the refraction of the vertical meridian the arc of the ophthalmometer and the diagram are turned 90°. The vertical line of the diagram, which becomes horizontal now, represents the angular distances, while the axis previously horizontal marks the dioptres. The first diagram illustrates the changes in corneal curvature after an iridectomy for glaucoma.

CASE 1. *Glaucoma chronicum simplex.*—The patient was a man, aged 59 years. T. + 1. Ophthalmometer: L. $\pm$ 0 (i.e., no corneal astigmatism). When any axis is mentioned it is the one of less refraction. The axis is marked as follows: $\overbrace{180\ R\ 0\ 0\ L\ 180}^{+0.5}$) Retinoscopy: L. $\lfloor\!\!\lfloor$ 0. V.L. = $\frac{6}{12}$ + 0·5 cyl. − = $\frac{6}{9}$. The continuous curve I in Fig 1 shows the corneal curvature before the operation. In both meridians the refraction at the section of cornea with visual axis is about 43 D. On June 6th, 1900, iridectomy upwards for left glaucoma was performed. Normal healing followed an incision with a medium-sized bent keratome. A week later the corneal refraction was measured, and it is represented by the dotted curve II. We see that the refraction of the vertical meridian is diminished in all the seven points measured. While this diminution is about 1·2 D. in the centre it amounts to about 3 D. at the upper end of the curve, the one nearest to the incision. In the horizontal meridian, however, the corneal refraction is increased all along the line by about 1 to 1½ D. Javal: L. | $\pm$1·5. Retinoscopy: L $\overset{+1·0}{\underset{-1·5}{\lfloor\!\!\lfloor}}$ V.L. < $\frac{6}{12}$ $\frac{+0·5\ \text{sph.}}{-2·0\ \text{cyl.}}$ < $\frac{6}{9}$. Curve III (interrupted line - - - - - - -) shows the changes three weeks later. All are a little lessened, but in the same direction. Javal: 80° $\pm$ 1·0. V.L. = $\frac{6}{12}$ $\frac{+0·5\ \text{sph.}}{-1·0\ \text{cyl.}}$ = $\frac{6}{9}$. All these changes are comparatively small owing to the peripheral position of the incision. Very much more marked are the changes after a corneal incision, as shown in Fig. 2.

CASE 2. *Myopia summa.*—The patient was a man, aged 38 years. Javal: R. — $\pm$ 0·5. V.R. < $\frac{6}{12}$ − 24·0 sph. = $\frac{6}{6}$. Fig. 2. Curve I (continuous line) before operation. Discissio lentis; puncture in the horizontal meridian in the temporal part of the limbus corneæ. Extractio cataractæ linearis 10 days later; a vertical incision from three to four millimetres long in the temporal half of the horizontal

[1] Archiv für Augenheilkunde, Band XXX., 1894.
[2] Rapport sur la Suppression du Crystallin Transparent dans la Myopie, Société Française d'Ophtalmologie, 1893.
[3] Archives d'Ophtalmologie, Paris, 1896.
[4] Sulla Correzione Chirurgica dell' Astigm., Reale Academia di Medicina di Torino, 1897.
[5] Archiv für Ophthalmologie, XLV., I., p. 117.
[6] Über die Operative Behandlung kleiner Krümmungsfehler der Hornhaut. Klinische Monatsblätter für Augenheilkunde, November, 1899.
[7] La Forme de la Cornée Humaine et son Influence sur la Vision. Archives d'Ophtalmologie, 1897

meridian two millimetres from the limbus. Curve II (dotted line). recorded seven and a half weeks after first operation. We notice the same changes—i.e., diminution of refraction in the meridian of the incision (horizontal), especially marked in the temporal half of the curve (the one nearest to the incision); increase of refraction in the vertical meridian. The changes were undoubtedly more marked shortly after the operation, but the diagram could not be taken until the cataract was sufficiently absorbed to enable the patient to fixate correctly. Javal: $20° \pm 3{\cdot}5$. V. R. $= \frac{6}{12} \frac{+ 1{\cdot}5 \text{ sph.}}{- 2{\cdot}5 \text{ cyl. } 20°} = \frac{6}{12}$.

It is well known that by far the greater part of astigmatism is under normal conditions due to faulty curvature of the cornea. Astigmatism caused by irregular contraction of the ciliary muscle has never been proved.* Any plan, however, to cure astigmatism by perforating corneal incisions based on experience gained by other operations seems to me to be wholly unjustifiable on account of the danger involved with any perforating wound. Incidental experiences when cauterising a corneal ulcer or infiltration induced me to try galvano-caustic. I employed the ordinary loop of fine platinum wire, presenting at its tip a surface of about one millimetre. The instrument is connected with the electric main (alternating current) by a transformer and a rheostat. Dull red heat was employed. A small punctiform burn was effected in the limbus or in the cornea, penetrating to about one-half of the corneal thickness. The small operation was performed under local (cocaine—holocaine) anæsthesia. In some cases I found it advisable to mark the point chosen for cauterisation by a small superficial abrasion and subsequent staining with fluorescin. The marking was done while the patient looked at a distant (five metres) object straight in front of him in the horizontal plane, so as to obviate torsion movement of the eyeball. The cauterisation itself lasted from two to three seconds. The effect was in all cases exactly the reverse of what took place by incision. The following case will illustrate this.

CASE 3. *Hypermetropic astigmatism.*—The patient was a girl, aged nine years. Javal: R. $170° \pm 3{\cdot}5$. Retinoscopy: $\left|\begin{smallmatrix}0\\+4{\cdot}0\end{smallmatrix}\right.$. V.R. $= \frac{6}{24} + 3{\cdot}5$ cyl. $| = \frac{6}{12}$. Continuous curve I before operation. A punctiform cauterisation was made in the horizontal meridian at two places about one and a half millimetres distant from the outer and the inner limbus respectively. The immediate result as measured by the ophthalmometer was R. $| \pm 2{\cdot}0$. The treatment consisted of instillations of homatropin, bathing the eye with warm boric acid lotion, and a monocular bandage for two days. Two days after the operation the dotted Curve II was taken (Fig. 3). Javal: R. $| \pm 1{\cdot}5$. It will be seen that the horizontal meridian shows a considerable increase of refraction, the vertical one showing a diminution of lesser extent. The changes are exactly the reverse of those after corneal incision. Four days after the operation the condition was—Javal: R. $170° \pm 0{\cdot}5$. Retinoscopy: $\left|\begin{smallmatrix}+1{\cdot}5\\+1{\cdot}5\end{smallmatrix}\right.$. Eight days after the operation—Javal: R. $170° \pm 0{\cdot}75$. V.R. $= \frac{6}{12} + 1{\cdot}25 = \frac{6}{9}$. Six weeks after operation—Javal: R. $- \pm 1{\cdot}5$. Retinoscopy: $\left|\begin{smallmatrix}+1{\cdot}0\\+2{\cdot}0\end{smallmatrix}\right.$. As in incisions the immediate effect decreases after a short time, but a permanent result is always left. The immediate effects of the operation as well as its decrease afterwards are, however, very much greater than in the case of incisions. It will be noticed later that th's decrease is not so marked in adults. Owing to the great increase in refraction of the operated meridian and the slight decrease of the one perpendicular to it, the eye becomes necessarily more myopic —i.e., less hypermetropic. The left eye of the same patient presents changes very similar after the operation.

Javal: L. $- \pm 3{\cdot}75$. Retinoscopy: L. $\left|\begin{smallmatrix}0\\+4{\cdot}0\end{smallmatrix}\right.$. V.L. $= \frac{6}{24} + 3{\cdot}5$ cyl. $| + \frac{6}{12}$. Operation as in the right eye—i.e., punctiform cauterisation of the cornea at both ends of the horizontal meridian about one and a half millimetres from the limbus. Immediate effect: L. $\pm 1{\cdot}5$. Two days after the operation: L. $| \pm 0{\cdot}5$. Six days after operation: L. $- \pm 0{\cdot}5$. Retinoscopy: $\left|\begin{smallmatrix}+2{\cdot}0\\+2{\cdot}0\end{smallmatrix}\right.$. V.L. $= \frac{6}{12} + 1{\cdot}5 = \frac{6}{9}$. Six weeks after operation: L. $- \pm 1{\cdot}25$. Regrettable is here again the partial loss of the first operative result. However, the little girl, who before the operation was obliged to wear glasses always, uses them now for near work only. Another slight cauterisation performed three months later has removed the remaining astigmatism and the refraction of both eyes is now + 2·0 D. sph. V. R. } / V. L. } $= \frac{6}{9} + 1{\cdot}5 = \frac{6}{6}$.

CASE 4. *Mixed astigmatism.*—Curve I, Fig. 4, before operation. Javal: R. $- \pm 3{\cdot}5$. Retinoscopy: R. $\left|\begin{smallmatrix}-2{\cdot}0\\+1{\cdot}0\end{smallmatrix}\right.$. V.R. $= \frac{6}{24} \frac{+ 1{\cdot}0 \text{ sph.}}{- 3{\cdot}0 \text{ cyl.} -} = \frac{6}{12}$. The patient, aged 42 years, complained of neuralgic pains over the eyebrows, especially when she left off her glasses. Punctiform cauterisation at both ends of the horizontal meridian of the cornea one millimetre distant from the inner and outer limbus was performed, the cauterisation wound in the temporal half of the cornea being rather deeper. The immediate result was R. $| \pm 1{\cdot}0$. On the day after operation: R. $- \pm 0{\cdot}5$. Three days after operation: R. $170° + 1{\cdot}0$. Curve II taken. The increase in the refraction of the horizontal meridian was very much more marked in its temporal half (the right half of Curve II) simply because the cauterisation in that part of the cornea extended deeper into the tissue (Fig. 4). Six days after operation: R. $170° \pm 1{\cdot}0$. Retinoscopy: R. $\left|\begin{smallmatrix}-1{\cdot}0\\-0{\cdot}5\end{smallmatrix}\right.$. V.R. $= \frac{6}{12} \frac{+ 0{\cdot}5 \text{ sph.}}{- 0{\cdot}5 \text{ cyl.} -} < \frac{6}{6}$. Ten weeks after operation: R. $170° \pm 1{\cdot}5$. V.R. $< \frac{6}{12} - 0{\cdot}75$ cyl. axis $170° = \frac{6}{9}$. Three months after operation: R.— $\pm 1{\cdot}5$. V.R. $= \frac{6}{12} - 1{\cdot}0$ cyl. axis $- = \frac{6}{9}$. Left eye of the same patient—Javal: $10° \pm 2{\cdot}5$. Retinoscopy: $\left|\begin{smallmatrix}-1{\cdot}0\\+1{\cdot}0\end{smallmatrix}\right.$. V.L. $= \frac{6}{12} \frac{+ 0{\cdot}75 \text{ sph.}}{- 1{\cdot}5 \text{ cyl.} -} = \frac{6}{9}$. Curve I, Fig. 5, before operation. Operation as in right eye. Immediate result: L. $| \pm 1{\cdot}5$. Three days after operation: L. $\pm 0{\cdot}25$. Curve II taken. It is rather difficult to make the cauterisation wound on both sides perfectly equal and we see here again a considerable difference in the increase of refraction between the two sides of Curve II. Eight days after operation: L. $- \pm 0{\cdot}5$. Retinoscopy: L. $\left|\begin{smallmatrix}0\\0\end{smallmatrix}\right.$. V.L. $= \frac{6}{9}$. One month after operation: *status idem*. Ten weeks after operation: L. $- \pm 0{\cdot}75$. Retinoscopy: L. $\left|\begin{smallmatrix}0\\0\end{smallmatrix}\right.$. V.L. $= \frac{6}{9}$. Four months after operation: L. $- \pm 1{\cdot}0$. V.L. $= \frac{6}{9} - 0{\cdot}5$ cyl. $- = \frac{6}{6}$. The patient goes about without glasses with comfort.

CASE 5. *Compound hypermetropic astigmatism.*—The patient, about 30 years of age, complained of neuralgic pain in the right eye. Javal: R. ± 0. Retinoscopy: R. $\left|\begin{smallmatrix}+2{\cdot}5\\+0{\cdot}5\end{smallmatrix}\right.$. V.R. $= \frac{6}{12} \frac{+ 2{\cdot}0 \text{ sph.}}{- 2{\cdot}0 \text{ cyl.}} = \frac{6}{12}$. Left eye normal. Emmetropic. V.L. $= \frac{6}{6}$. Punctiform cauterisation of the right cornea in the upper part of the vertical meridian, one and a half millimetres from the limbus. Three days after operation—Javal: R. $- \pm 2{\cdot}5$. Retinoscopy: R. $\left|\begin{smallmatrix}+1{\cdot}5.\\+1{\cdot}5\end{smallmatrix}\right.$. V.R. $= \frac{6}{9} + 1{\cdot}0 = \frac{6}{6}$. Curve II taken. This was one of the rare cases in which the astigmatism was not due to abnormal curvature of the cornea. Although there was no corneal astigmatism before the operation examination by the direct method, by retinoscopy as well as by test-types, proved an astigmatism of 2 D. to be present. There was no subluxation of lens (Fig. 6). The operation decreased the curvature of the horizontal meridian, increasing it in the vertical; and we find afterwards corneal astigmatism 2·5 D.; total astigmatism, none. I have not seen the patient since, as she left Europe. I heard, however, from her three months after the operation that the right eye was then quite comfortable and that she could see much better with it than she could before the operation.

CASE 6.—*Myopic astigmatism.*—The patient was a woman, aged about 30 years. Both eyes Javal: $- \pm 1{\cdot}5$. Retinoscopy: $\left|\begin{smallmatrix}-1{\cdot}0\\0\end{smallmatrix}\right.$. V. $= \frac{6}{12} - 1{\cdot}0$ cyl. $- < \frac{6}{6}$. Fig. 7 represents the right eye. Both cornea were cauterised at one point only in the horizontal meridian one millimetre from the temporal limbus. As before, the corneal curvature (refraction) increased in the

* Cf. Hess.

FIG. 1.

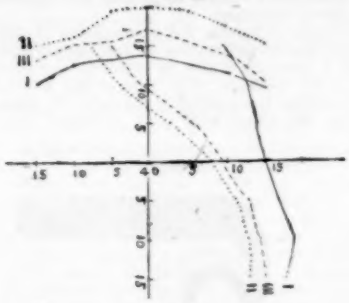


FIG. 2.

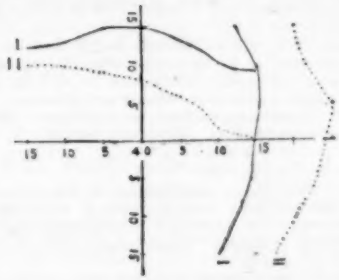


FIG. 3.

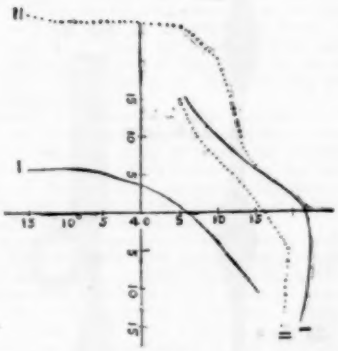


FIG. 4.

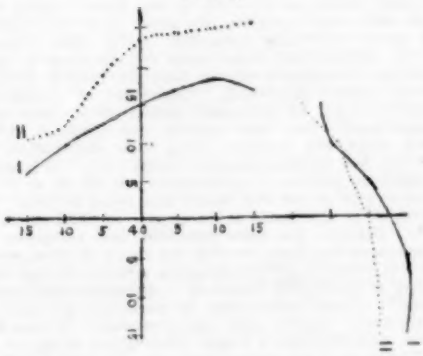


FIG. 5.

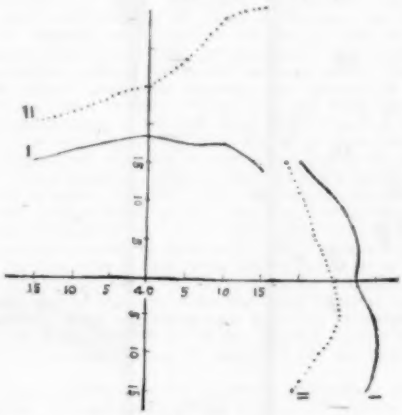


FIG. 6.

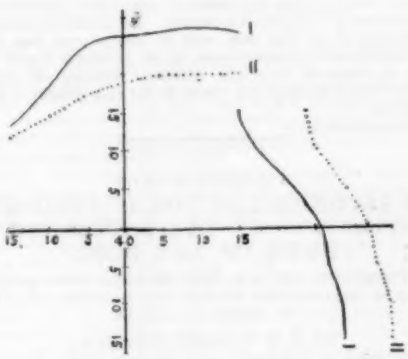


FIG. 7.

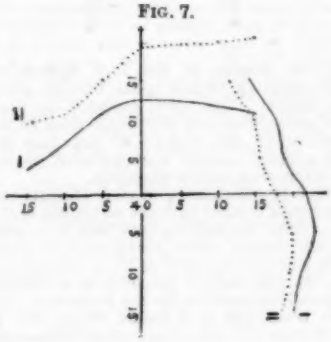
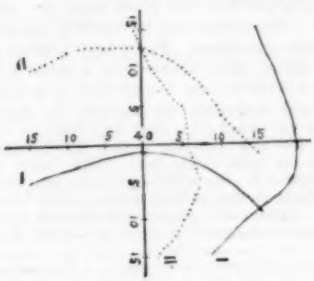


FIG. 8.



meridian operated upon, decreasing in the other. Immediate result: R. $\frac{-0.5}{\pm 1.5}$. L. $+2.0$. A fortnight later: R. $\frac{-0.5}{-0.5}$. R. $\frac{-0.5}{-0.5}$. V.R. $< \frac{6}{9} - 0.25 = \frac{6}{6}$. L. ± 0. L. $\frac{-0.5}{-1.0}$. V.L. $= \frac{6}{9} - 0.5$ cyl. $= \frac{6}{6}$. A month after the operation both eyes were about equal. Refraction — 0·5 D. sph. The patient is quite comfortable without any glasses.

CASE 7. *Mixed astigmatism; axis oblique.*—The patient was a man, aged 60 years. Right eye normal. L. $30° \pm 4.5$. V.L. $= \frac{6}{9}$ $\frac{+3.0 \text{ sph.}}{-4.0 \text{ cyl. } 30°} < {}^{6}_{12}$. Fig. 8, Curve I, before operation. Punctiform cauterisation of the cornea at both ends of 30° meridian, two millimetres from the limbus. Immediate result: L. $110° + 2.5$. Three days later: L. $110° + 1.5$. Curve II taken. Three weeks later: L. $35° \pm 0.5$. V.L. $= \frac{6}{9} + 1.0 = \frac{6}{6}$.

Ten other cases operated upon by me in the same manner showed very similar results. The cauterisation wound invariably healed in from one to two days. About three weeks after the operation the scar could be detected only by a very close inspection or by focal illumination. I selected only those cases for operation in which there was a reasonable chance that the patient could do without glasses afterwards. Therefore the operation is limited to cases of compound hypermetropic and mixed astigmatisms. The best results are obtained in the former cases, the patients losing their astigmatism and becoming less hypermetropic or emmetropic. It is always necessary to produce a considerable over-effect, as a considerable part of the first result disappears in time. The part which is lost seems to be greater in children than in adults. Further, the more superficial and peripheral the cauterisation the more likely is the result to disappear in time. If, however, the cauterisation extends through about one-half of the corneal thickness a permanent result will be obtained. I may mention that in some cases the result was perfect eight months after the operation. It stands to reason, however, that a longer observation—a careful discrimination as to the patient's age, sex, and state of health—would add much greater verification and value to the suggestions made above. I feel, however, justified in advising the operation for cases of compound hypermetropic astigmatism of considerable degree. Under those conditions the patient is, at any rate, sure to lose a good deal of his astigmatism and hypermetropia so as to enable him in most cases to dispense with the constant wearing of glasses. With ordinary precautions there is no risk attached to the operation.

Finsbury-circus, E.C.

A FURTHER NOTE ON

THE TECHNIQUE OF THE QUANTITATIVE ESTIMATION OF THE BACTERICIDAL POWER OF THE BLOOD,

AND (INCIDENTALLY) ON THE POSSIBLE APPLICATION OF SUCH ESTIMATIONS TO THE STANDARDISATION OF BACTERIAL VACCINES.

BY A. E. WRIGHT, M.D. DUB.,

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THIRD COMMUNICATION.[1]

IN my last communication I described a method by which the bactericidal power of the blood could be quantitatively determined. The procedure in question consisted essentially of three operations. In the first a series of minimal volumes of serum were mixed with a series of graduated dilutions of a broth culture, in each case in a capillary tube. In the second operation, the survival or destruction of the bacteria was tested after they had been in contact with the serum for any desired period by blowing out the contents of the tube, either into sterile broth or on to the surface of agar. In the third operation the number of the bacteria present in the culture employed for the determination of the bactericidal power was elicited by mixing in a capillary tube a measured volume of diluted broth culture with an appropriate volume of gelatin, and by counting the colonies which developed.

In the course of further daily occupation of the question of the quantitative estimation of the bactericidal power of the blood I have been able to introduce certain simplifications into the methods. The first of the modifications in question consists in substituting the spiral of glass shown in Fig. 2 for the cotton-wool plug previously employed for protecting the interior of the tube against contamination. The moulding of this spiral involves practically no additional labour. The time occupied in plugging the tubes with cotton-wool and sterilising them in the flame is thus saved, while the interior of the tube is quite as effectively guarded against contamination as is the case when the cotton-wool plug is employed.

FIG. 1.

FIG. 2.

The method of determining whether bacteria have or have not survived their contact with the serum has been simplified as follows. After the bacteria have been in contact with the serum for the desired period sterile broth is introduced into the tube in sufficient quantity to fill up the mixing chamber. This done, the tube itself is employed as a cultivation tube. The manipulations required for the purpose of filling up the tube with broth are of a nature which will present no difficulty to those who have familiarised themselves with the

[1] The first communication was published in THE LANCET of Dec. 1st, 1900, p. 1566 and the second communication in THE LANCET of March 2nd, 1901, p. 609.

technique previously described by me in connexion with the filling in of sedimentation tubes. These operations are as follows.

The tubes which contain the mixture of serum and bacterial culture having been taken in hand *seriatim*, a rubber teat is in each case fitted in a collapsed condition upon the upper end of the tube. The lower end of the tube—i. e., the terminal bead and a small portion of the capillary stem beyond this—is now introduced into a flame (a small luminous flame, such as that of a "peep light," may conveniently be employed for the purpose), and this end is, whilst still hot, plunged into a watch-glass containing sterile broth. The end having been snapped off in this manner, the nutrient broth runs up into the tube and is allowed to fill in the mixing chamber nearly to the top. The tube is then removed from the fluid—the inflow being at this moment stopped by making a gentle pressure on the teat—and the end is sealed up in the flame. A decision as to whether the bacteria have or have not survived the action of the serum can now, after the tube has been cultivated for 24 hours at blood temperature, be judged of by a mere inspection. Where the determination of bactericidal power has been instituted with an agglutinating serum, care will of course have to be taken not to overlook the sedimented bacteria which may be lying at the bottom of the tube. In cases of doubt the contents of the tube can always be microscopically examined.

The method of determining the number of bacteria present in the culture employed has also been simplified in the following way. A series of measured volumes of an extreme dilution of the culture is now taken for cultivation, the number of the contained bacteria being determined by ascertaining what volume of the diluted broth culture has to be employed to obtain a cultivation.

For the purposes in question it is obviously necessary to be able to dilute quickly and unlaboriously. The pipette represented in the figure enables this to be done. The pipette in question is made as follows. 1. A piece of stoutish glass tubing (of about three-eighths of an inch in diameter) is drawn out in the flame into a capillary stem. 2. This capillary stem is then graduated in five divisions of five cubic millimetres by the method fully described in a previous communication. 3. 10 successive volumes of coloured fluid, each consisting of 25 cubic millimetres, are filled into the pipette, a bubble of air being, as in the technique already described in connexion with capillary sedimentation tubes, interposed between each two of the 25 cubic millimetre volumes last spoken of. 4. A division mark is now placed on the body of the tube, corresponding to the 250 cubic millimetres now filled in. 5. The contents having been blown out and the tube having been dried, the tube is now drawn out in the flame at the point indicated. After cooling down the pipette and filling it in again with 250 cubic millimetres, the division mark will now be found to fall on some part of the narrow, drawn-out portion of the stem. This point, when found by same procedure as before, is to be indicated with a division mark. 6. The tube is then to be drawn out again a little above this point so as to form a safety chamber, the narrowed part of the tube above this being moulded into a stout spiral. With reasonable care and with an occasional refreshing of the division marks the diluting pipette which has thus been made may be employed for an indefinite period.

To come, however, to the particular application of the pipette to the estimation of the number of bacteria contained in the culture employed for the bactericidal estimation, the first step will be to place in front of one's self four sterile watch-glasses and to cover each of these in. By filling in the pipette twice, and by withholding, when expelling the contents of the pipette into the watch-glass, one five cubic millimetre volume, 495 cubic millimetres of sterile broth are introduced into the first watch-glass. In a similar manner the two next watch-glasses are filled in each with 495 cubic millimetres. Lastly, the fourth watch-glass is filled in with 990 cubic millimetres. Five cubic millimetres of the undiluted bacterial culture are then introduced into the first watch-glass by means of the graduated pipette. After carefully mixing, five cubic millimetres are carried on from this into the second watch-glass. Before proceeding to mix the contents of the second watch-glass the pipette is now carefully washed out in boiling sterile water. Mixture having been effected five cubic millimetres are then carried on from the second to the third watch-glass. Lastly, the same precautions having been taken as in the previous case, 10 cubic millimetres are carried forward into the fourth watch-glass and mixture is effected. In this manner a dilution of 100,000,000 will have been arrived at in the case of the last watch-glass, and this, in the case of the typhoid cultures which have been employed by me, represents an appropriate dilution.

The next step in the procedure is to take a series of measured volumes of the 100,000,000 dilution. This is done by means of the graduated pipette already employed. Convenient volumes to employ are volumes of 500, 250, 125, 50, 25, 10, and five cubic millimetres respectively. These are measured off directly into tubes of sterile nutrient broth or, in case of the smaller volumes, on to sterile nutrient agar. The first and second of these volumes are conveniently obtained by filling in the pipette in the first case twice and in the second case once; the volume of 125 cubic millimetres is obtained by filling in the pipette five times successively up to the 25 cubic millimetres division-mark, a bubble of air being, of course, interposed between each two volumes. The fourth and fifth measured portions, consisting as they do of 50 and 25 cubic millimetres respectively, will conveniently be obtained by filling in the pipette in the first case twice and in the second case once up to the 25 cubic millimetre division-mark. Lastly, the sixth and seventh volumes are conveniently obtained by filling in the pipette again to the 25 cubic millimetre division and expelling from the pipette in the one case two volumes and in the other case one volume of the five volumes of contained fluid.

The method of calculating the results will best be explained by the assistance of two actual examples of enumerations of the number of bacteria obtained in the typhoid cultures.

EXAMPLE 1.

Tube 1, to which have been added 500 cubic millimetres of 100,000,000 dilution	Growth.
Tube 2, to which have been added 250 cubic millimetres of 100,000,000 dilution	Sterile.
Tube 3, to which have been added 125 cubic millimetres of 100,000,000 dilution	"
Tube 4, to which have been added 50 cubic millimetres of 100,000,000 dilution	"
Tube 5, to which have been added 25 cubic millimetres of 100,000,000 dilution	"
Tube 6, to which have been added 10 cubic millimetres of 100,000,000 dilution	"
Tube 7, to which have been added 5 cubic millimetres of 100,000,000 dilution	"

Taking these tubes *seriatim*, the inferences that can be drawn from their consideration are as follows.

Tube 1.—From the fact that a culture of typhoid bacillus is obtained in the case of this tube which contained half a cubic centimetre of the diluted culture it may be inferred that one cubic centimetre of the diluted culture in question contains two or more typhoid bacilli.

Tube 2.—From the fact that this tube which contained one quarter of a cubic centimetre of the diluted culture remains sterile, it may be inferred that one cubic centimetre of diluted culture contains less than four typhoid bacilli. Or, if we take into consideration the fact that no culture develops in Tubes 3, 4, 5, 6, and 7, which contain in the aggregate 465 cubic millimetres, it may be inferred that less than 2·1 (1,000 ÷ 465 = 2·1) are contained in one cubic centimetre of the dilution employed. Taking, therefore, 2 as representing the number of bacteria in one cubic centimetre of the dilution employed, and multiplying this figure by 100,000,000, we arrive at 200,000,000 as the number of typhoid bacilli contained in one cubic centimetre of the original culture.

EXAMPLE 2.

Tube 1, to which have been added 500 cubic millimetres of 100,000,000 dilution	Growth.
Tube 2, to which have been added 200 cubic millimetres of 100,000,000 dilution	Sterile.
Tube 3, to which have been added 100 cubic millimetres of 100,000,000 dilution	Growth.
Tube 4, to which have been added 50 cubic millimetres of 100,000,000 dilution	Sterile.
Tube 5, to which have been added 25 cubic millimetres of 100,000,000 dilution	"
Tube 6, to which have been added 10 cubic millimetres of 100,000,000 dilution	"

We may infer here as before from the fact that a growth takes place in Tube 1 that one cubic centimetre of the dilution employed contains at least two bacilli. From the results of Tube 2, which has been filled in with one-fifth of a cubic centimetre of the diluted culture, we infer that there are less than five bacilli in the cubic centimetre of dilution.

Taking the result obtained in Tube 2 in conjunction with the result obtained in Tube 3, we recognise that to obtain a growth it was necessary to take for cultivation between over 200 and 300 cubic millimetres of the diluted culture. We thus arrive at the result that one cubic centimetre of the dilution employed must have contained between five and 3·3 bacilli. Taking the mean between these two—4·15—and multiplying by 100 000,000, the figure representing the dilution, the number of typhoid bacilli in one cubic centimetre of the undiluted culture works out as 415,000,000.

In conclusion, reference may be made to yet another procedure which allows of the measurement of the bactericidal power of the blood, or alternatively of the measurement of the strength (expressed in terms of the anti-bactericidal power which it is capable of exerting on the blood) of a dead bacterial culture which is to be employed as a vaccine. The method in question consists in bringing together in a series of capillary tubes corresponding volumes of (*a*) serum, (*b*) dead bacterial culture, and (*c*) a young culture of the typhoid bacillus which has been diluted to a sufficient degree to reduce the number of contained bacteria many times below the number which the volume of blood which is to be dealt with would be capable of destroying.

In practice these conditions are conveniently achieved by bringing together in a capillary tube one volume of serum, one volume of a 10,000 or 100,000 dilution of a one-day-old broth culture of the bacillus typhosus, and two volumes of dead bacterial culture or of a graduated dilution of this culture. The survival of the bacteria introduced in the volume of living culture employed will in such a case be conditional upon the all but complete abolition of the bactericidal power of the serum under the influence of the anti-bactericidal effect exerted by the dead bacteria. A growth will, in other words, be obtained where the bactericidal power of the blood is relatively small and where the addition of the bacterial vaccine is relatively large. The contents of the tube will, on the contrary, be found sterile where the bactericidal power of the blood is relatively considerable or where only a small addition of the vaccine has been made.

While leaving for a future communication the consideration of the application of this method to the standardisation of bacterial vaccines in general,[2] and the consideration also of the exploitation of this procedure as an instrument of research, it will be appropriate here to exemplify the working of the method. The examples given below consist of a series of bactericidal determinations made precedent to anti-typhoid inoculation and in the negative phase which supervenes upon inoculation where relatively large doses of dead bacterial cultures are inoculated.

TABLE I.—*Determinations of Bactericidal Power made by Mixing One Volume of Undiluted Serum in a Capillary Tube with an equal volume of a 24-hour-old Broth Culture of the Bacillus Typhosus as particularised below. Effect Exerted by Serum Tested by Blowing out the Contents of the Tube on to Nutrient Agar.*

Source of serum and date.	Dilutions of the typhoid culture employed and results obtained.				
	Undiluted.	2-fold dilution.	5-fold dilution.	10-fold dilution.	50-fold dilution.
Own, April 8th, 1901	Growth.	Sterile.	Sterile.	Sterile.	Sterile.
Own, April 9th	,,	,,	,,	,,	,,
*Anti-typhoid Inoculation.**					
Own, April 10th	Growth.	Growth.	Growth.	Growth.	Growth.
,, ,, 11th	,,	,,	,,	,,	,,

* One and a half cubic centimetres of No. 32 anti-typhoid vaccine were employed for this inoculation, this quantity having been selected with a view to the production of a negative phase.

[2] This method would appear to be applicable not only to the standardisation of anti-typhoid vaccine but also to the standardisation of the anti-cholera and anti-plague vaccines which have been so largely employed by Mr. Haffkine, and of the anti-Malta fever and anti-staphylococcus vaccines which have recently been employed by myself. Whereas in the case of these last three vaccines the corresponding living micro-organism is apparently comparatively insusceptible to the bactericidal effect of the blood, a more sensitive micro-organism such as the cholera or typhoid bacillus may be found to serve as a test micro-organism. The anti-staphylococcus vaccine referred to above would appear to have an application in connexion with the treatment of furunculosis and in connexion with the production of increased resistance of patients whom it is proposed to submit to operations which involve a danger of sepsis.

TABLE II.—*Determination of Bactericidal Power and of Comparative Strength of Different Anti-typhoid Vaccines made by Mixing in Capillary Tubes One Volume of Serum and One Volume of a 100,000-fold Diluted Culture of the Bacillus Typhosus with Two Volumes of Vaccine, or Vaccine and Diluting Fluid, as particularised below. Results as before Tested by Blowing out the Contents of the Tubes on to Agar.*

Source of serum and date.	Number of tube.	Volumes of vaccine and diluting fluid which were employed.	Designations of the anti-typhoid vaccines which were employed.		
			32 vaccine.	33 vaccine.	Agar vaccine.
Own, April 8th.	1	Two volumes of undiluted vaccine.	Growth.	Growth.	Growth.
	2	One volume of undiluted vaccine. One volume of ½-fold diluted vaccine.	,,	,,	,,
	3	One volume of undiluted vaccine. One volume of 2-fold diluted vaccine.	,,	,,	,,
	4	One volume of undiluted vaccine. One volume of 4-fold diluted vaccine.	,,	Sterile.	,,
	5	One volume of undiluted vaccine. One volume of sterile broth.	Sterile.	,,	,,
	6	One volume of ½-fold diluted vaccine. One volume of sterile broth.	,,	Contamination.	,,
	7	One volume of 2-fold diluted vaccine. One volume of sterile broth.	,,	Sterile.	,,
	8	One volume of 4-fold diluted vaccine. One volume of sterile broth.	,,	,,	Sterile.
	9	One volume of 8-fold diluted vaccine. One volume of sterile broth.	—	—	,,
	10	One volume of 12-fold diluted vaccine. One volume of sterile broth.	—		,,
Anti-typhoid Inoculation.†					
Own, April 10th.	1	As No. 1 above.	Growth.	Growth.	—
	2	As No. 2 ,,	,,	,,	—
	3	As No. 3 ,,	,,	,,	—
	4	As No. 4 ,,	,,	,,	—
	5	As No. 5 ,,	,,	,,	—
	6	As No. 6 ,,	,,	,,	Growth.
	7	As No. 7 ,,	,,	,,	,,
	8	As No. 8 ,,	,,	,,	,,
	9	As No. 9 ,,	—	—	,,
	10	As No. 10 ,,	—	—	,,
Own, April 11th.	1	As No. 1 above.	Growth.	Growth.	—
	2	As No. 2 ,,	,,	,,	—
	3	As No. 3 ,,	,,	,,	—
	4	As No. 4 ,,	,,	,,	—
	5	As No. 5 ,,	,,	,,	—
	6	As No. 6 ,,	,,	,,	Growth.
	7	As No. 7 ,,	,,	Sterile.‡	,,
	8	As No. 8 ,,	Sterile.	Growth.	,,
	9	As No. 9 ,,	—	—	,,
	10	As No. 10 ,,	—	—	,,

† Inoculation with one and a half cubic centimetres of vaccine No. 32.

‡ An experimental error.

Netley.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

FURTHER REMARKS ON THE AGGLUTINATING ACTION OF PLAGUE BLOOD.

BY E. KLEIN, M.D., F.R.S.

IN addition to the experiments which I described in the first communication[1] I have made some further observations on this subject.

As I pointed out before, recent gelatin culture of the bacillus pestis yields readily a useful and workable salt emulsion, on which a decided and undoubted agglutination with the blood of rats that have recovered from infection with plague-culture can be demonstrated. I have prepared also guinea-pigs for this purpose. Guinea-pigs were on three different occasions, at intervals of from five to seven days, injected subcutaneously with a large dose of plague-growth scraped from the slanting surface of agar-culture suspended in salt solution and sterilised for 10 minutes at 70° C. Half a culture tube was used for each injection. The injection caused no illness in the animal, a passing slight tumour being the only effect. The animals were now injected with a small dose of living culture, from one-thirtieth to one-sixtieth of an agar tube; this caused illness and bubo, but the animals recovered. The first sign of definite agglutinating power by the blood of the animals was noticed about a fortnight after the last injection, from 1 in 20 to 1 in 30 causing agglutination within 15 minutes. A second injection with a small dose of living culture enhances this agglutinating power, inasmuch as 1 in 30 causes complete agglutination within five minutes.

With the blood of the so prepared guinea-pigs I have tested the agglutination of salt emulsions[2] of different strains of plague bacilli derived from human subjects infected in various countries—India, the Cape, South America, Alexandria, Smyrna, and Hong-Kong. In addition to these I had plague cultures which were obtained from a rat that had died from plague in Cardiff docks. The prepared guinea-pigs' blood agglutinated all these strains equally well, but it failed to agglutinate accidental impurities of different microbes belonging to the tribe of bacillus coli and the group of proteus, so that this blood is of use in diagnosis of plague culture.

I may add here that while the prepared guinea-pigs' blood has this specific action on bacillus pestis all of different strains other samples of blood which I have tested—blood of normal animals and blood of normal human beings—have no such action. Amongst the negative reactions I may mention the blood of the boy from the City-road who was, early in April, suspected of being affected with plague. The blood of this boy, kindly supplied to me by the help of Dr. Turner of the South-Eastern Hospital, during convalescence (towards the end of April), was tested on two different occasions; it failed to cause agglutination of the plague bacilli of any of the prepared strains.

St. Bartholomew's Hospital.

BLUE URINE.

BY JOHN GOOD, M.R.C.S. ENG., L.S.A.

THE following case may probably interest some readers.

On April 14th, 1901, an unmarried man, aged 43 years, came to me complaining that he felt sickly, had no appetite, felt pains in his loins, over his kidneys, and that his urine was of a "bad" colour. He was a tall, thin man, of a nervous manner. His face was somewhat puffy and his conjunctivæ were yellowish. His family history was good. He did not smoke and was of fairly steady habits. He had, however, recently indulged in too much beer and vomited after his last debauch. He had suffered from gonorrhœa about 20 years ago but never since. Since the commencement of this year he had taken an occasional dose of "salts" or a Seidlitz powder at intervals, but no other medicine—liquid, pill, or powder. His bowels acted regularly as a rule, but lately had been "out of order." He had a slight throat cough, his tongue was furred, and his skin was darkly pigmented over the abdomen, chest, and back, showing leucodermatous spots in places—particularly upon the abdomen. He repeated his statement about his urine being a "bad" colour, comparing it to a dull green book which was lying closed upon my table, and said that the urine had never been like it until that morning. I told him to send some to the surgery. Having been engaged in general practice for 20 years without having seen or heard, otherwise than casually in the medical journals, that there was such a condition as "blue" urine, I thought the patient was giving an exaggerated description, but when I unwrapped the bottle of urine it was of peacock-blue colour, clear, and stained the cork. It had a specific gravity of 1010 and an acid reaction; it contained no sugar or albumin, but turned a pretty rose colour on boiling with hydrochloric acid. Under the microscope were seen deep blue granules with squamous epithelium. Upon his coming to see me next day he said he felt less sickly, but his urine was not right. He passed in my presence about two ounces of sage-green urine, which I examined and found as before, except that microscopically the blue granules, where grouped, shaded into an orange colour. Although I had previously given him a saline aperient mixture in repeated doses the bowels were not acting, so I supplemented the aperient with pilula hydrargyri cum colocynthide. The following day he had four loose stools and his tongue was cleaner; the urine had been greenish in the morning, but had since assumed its natural colour and his appetite was returning. I now gave him alkaline gentian mixture with sodium salicylate in five-grain doses and he quickly recovered his normal health and spirits. He assured me, and I believed him, that he had not taken anything that he knew of that would cause his urine to become blue, that he had never seen his urine blue before, or known anyone else who had blue urine.

The view I took was that it arose through duodenal indigestion. Trypsin in the small intestine breaks up proteid into peptone, peptone into leucine and tyrosin, and further into indol, phenol, and other bodies. Indol by the putrefactive action of bacillus coli in the intestine forms indican—i.e., potassium indoxyl sulphate. When urine boiled with hydrochloric acid gives a pink colour it indicates that indican is present in excess. Indican turns indigo-blue by oxidation. Osler and Fagge both say that the urine in many cases turns blue after exposure to the air. In the above case the urine was passed blue, undergoing no subsequent change. I sent a specimen of the deep-blue urine to be examined by an expert and received the report that it was due to methylene blue, suggesting that the patient may have taken it in pill, but looking at the history of the case, the excess of indican, and the orange tints of the immatured blue, I cannot yet bring myself to alter my diagnosis. I should, however, like to hear the opinion of others on the matter.

PS.—On April 22nd I sent both specimens of urine to London and received them back this morning (May 22nd). When they arrived here I was surprised to find both colourless, but upon exposing them to the air for re-examination both regained their original colour. I think this incident supports my view on the etiology.

Stockport.

A CASE OF PRIMARY CARCINOMA OF THE VAGINA.

BY RAINSFORD F. GILL, M.D. LOND.

A CASE of this exceedingly uncommon form of disease has recently come under my care and I record it because McClintock says that no well-marked and undoubted case fell under his notice and Barnes speaks only of some cases of ulceration of the vagina which he believed to be of a cancerous nature.

The patient was a healthy-looking woman, aged about 30 years, who had requested her husband to call upon me to

[1] THE LANCET, Feb. 16th, 1901, p. 456.

[2] A simple method to obtain a good emulsion is the following. Remove by means of a platinum loop a particle of the growth from the surface of a recent gelatin culture, rub it well and uniformly over the slanting surface of fresh gelatin, then pour from one to two cubic centimetres of salt solution over this infected surface; by shaking the tube the transferred plague material is readily washed off as a uniform emulsion.

get a lotion for the "whites," but for which I declined to give a prescription without seeing the patient first. I then elicited that they were sometimes tinged and that she had a good deal of pain and some hæmorrhage on coitus. On examination about two inches within the vagina a cauliflower growth of about the size of three walnuts with a base of the size of a florin was met with. With a finger in the rectum and one in the vagina no trace of thickening could be felt around the clearly circumscribed base and the bowel-wall was freely moveable away from the base. Beyond the growth the vagina was perfectly healthy as was the cervix. Several glands in both groins were enlarged and tender. Owing to the total absence of any infiltration of the vagina I thought that the case was probably a papilloma and that the enlargement of the glands was simply due to the irritation of the growth and the secretion. I sent the patient to University College Hospital where Dr. G. F. Blacker removed the growth by a circular incision of about the size of a crown-piece, this seeming to be well beyond the growth in all directions. The glands were removed at the same time. The patient left the hospital in about three weeks and on examination later I found a great deal of cicatricial contraction with hardened masses bulging between the scars and bleeding freely on the slightest touch. In less than a month there were large warty growths over the vulva and others at the surface of the vagina which in later times have become as large as oranges, giving great difficulty in micturition, while the site of the vaginal growth has spread and invaded the bowel to such an extent as to threaten obstruction of the bowels, this only being obviated by passing a large catheter through the mass and keeping the fæces very liquid by numerous small injections through it. The patient has now numberless disseminated nodules over the skin of the abdomen with affections of some of the glands in the groin.

In a recent letter from Dr. Blacker he tells me that the growth proved microscopically to be carcinoma. Except when the bowels have a difficulty in being relieved the pain is kept down perfectly effectually by repeated doses of nepenthe which, in this case, as in many other cases, seems most effectual in allaying pain without producing any disorder of the head, stomach, or bowels and is in this way immeasurably superior to the tincture of opium of the British Pharmacopœia.

One moral to be gained from this case is not to prescribe without a full examination of the patient. Had I given a prescription (which would naturally have failed) and then had seen the patient some weeks later my conscience would have reproached me for ever with the thought that had its cause been known earlier it would have been probably a curable case—an erroneous conclusion, but one which would never have been disproved.

King Henry's-road, N.W.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. BARTHOLOMEW'S HOSPITAL.

A CASE OF STRANGULATED HERNIA IN A PREMATURE CHILD, AGED FIVE WEEKS; OPERATION; RECOVERY.

(Under the care of Mr. D'ARCY POWER.)

STRANGULATED hernia in very young children is extremely rare, for though about 100 cases of herniotomy for strangulation have been recorded up to the present in which the patient was under a year old, this number is seen to be small when compared with the very large number of children who suffer from congenital inguinal hernia. Contrary to what might have been expected, the mortality is by no means high in those cases in which an operation is performed. About 16 cases have been recorded during the first month and about as many in the second.[1] Nearly half the cases in children under one year occur during the first three months.

On April 15th, 1901, a very wasted and ill-nourished male child, aged five weeks, was admitted into St. Bartholomew's Hospital, under the care of Mr. D'Arcy Power, with the history that a swelling was first noticed in the left groin on the 12th and that on the 13th the child vomited every time he was put to the breast and cried all day. The vomiting continued till the time of admission and the bowels had not been opened since the 12th at 9 A.M. The child was said to be born prematurely at seven months. He was blue and collapsed and in the left inguinal region there was a hernial swelling as large as a walnut. The hernia was cut down upon as taxis under chloroform failed to reduce it. The sac was opened and was found to contain a very little piece of omentum with a knuckle of small intestine rather deeply congested. The hernia was of the congenital variety and there was practically no fluid in the sac. The constriction was situated at the internal ring and was very tight. The stricture was divided, the bowel was returned, and the sac was isolated, ligatured in two places and divided, the distal part being left to form a tunica vaginalis whilst the proximal portion was stitched to the peritoneal surface of the abdominal wall. The external abdominal ring was closed with a single suture and the wound was united with silkworm gut. The child bore the operation well and was fed by the mouth four hours after he recovered from the anæsthetic. The bowels were opened on the following morning and he never vomited. The sutures were taken out on the fourth day when the wound was perfectly healed. A collodion dressing was applied and the child left the hospital on the 30th. He weighed 4 pounds 12 ounces on admission and 5 pounds 1 ounce on the day of discharge.

On May 21st the child was taken to Mr. Power, as a new patient, at the Metropolitan Dispensary for the relief of a hernia on the right side. He recognised the child as soon as he saw the scar and as the hernia seemed to be due to the straining caused by a very tight phimosis a circumcision was performed. The child again recovered with a single dressing.

Remarks by Mr. POWER.—Cases of strangulated hernia requiring an operation are sufficiently rare in very young children to make it worth while to record their appearance from time to time. I am indebted to Mr. C. S. Hawes, my late house surgeon, for the notes of the case.

ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

A CASE OF CÆSAREAN SECTION AND COMPLETE REMOVAL OF THE UTERUS IN THE EIGHTH MONTH OF PREGNANCY FOR CANCER OF THE CERVIX.

(Under the care of Dr. THOMAS OLIVER and Mr. RUTHERFORD MORISON.)

THE best treatment for malignant disease of the cervix of an unimpregnated uterus is total hysterectomy, and the coexistence of pregnancy with the malignant disease increases the advisability of immediate operation, especially in cases in which there is a good hope of removing completely all the new growth. When pregnancy has advanced so far as the eighth month Cæsarean section followed by hysterectomy is the only satisfactory method of dealing with the condition. In the case recorded below there is very good reason for hoping that no recurrence will occur.

On Jan. 25th, 1901, a married woman, aged 39 years, was sent by Mr. H. B. Ord of South Shields to consult Dr. Oliver on account of uterine hæmorrhage. She was then far advanced in pregnancy. She looked a healthy but anæmic woman and was the mother of nine children, the youngest of whom was two years and one month old. All her confinements had been easy. Since the birth of her last child the patient had suffered on a few occasions from uterine hæmorrhage, especially during the last 18 months. Blood would come away once or twice a week and would continue only a few hours or for the greater part of a day. The hæmorrhage was irregular and for five or six weeks might entirely disappear. Five months before she had a severe but painless bleeding. This continued for two hours and then suddenly

[1] B. G. A. Moynihan, THE LANCET, Sept. 25th, 1897, p. 788.

ceased. Half a pint of bright, clotted blood escaped in a very short time. No more blood was seen by the patient until three days before seeing Dr. Oliver when there was another excessive loss unaccompanied by pain, but so profuse as to cause considerable anxiety to her medical attendant and friends. Seven months previously she first knew she was pregnant. There was morning sickness and in due course she "quickened," the abdomen meanwhile becoming correspondingly enlarged. When examined in Newcastle the movements of the child were very active. Apart from the hæmorrhages above alluded to there had been no vaginal discharge. The blood that escaped had no fœtor. The patient's general health had remained good. Her lips were slightly cyanosed. As regards the heart, over the tricuspid area a soft systolic murmur could be heard. The lungs and kidneys were healthy. The uterus reached to within three inches of the ensiform cartilage. The fœtus was easily felt, its movements were extremly active, and its heart's sounds could be best heard just above the umbilicus, and the placental souffle close to the umbilicus on the left side. On vaginal examination Dr. Oliver found the os uteri open and the interior rough and irregular; the greater part of the cervix uteri, especially on the left side, was occupied by a mass of friable growth the margins of which were irregular, nodular, and disposed to bleed. The cervix felt on the whole fairly moveable and the fornices so far as the finger could ascertain seemed to be free. Through the speculum the growth, which could be seen projecting towards the vagina, was dirty-greyish on the surface and had all the appearance of a cauliflower excrescence.

Dr. Oliver was therefore confronted with this problem: a woman in the eighth month of pregnancy with cancer of the cervix and the subject of severe recurrent uterine hæmorrhage. What was the best thing to do? To allow the patient to go on to term, to run the risks to herself and child incurred by recurrent excessive hæmorrhage and the dangers incidental to parturition by the passage of the infant through an unhealthy, unyielding, and tearable cervix, or to recommend the bolder, and, as events subsequently showed, the safer, procedure of abdominal section, incision of the uterus, and removal of the child followed by complete extirpation of the uterus and cervix? He advised the latter and recommended Mr. Ord to allow the patient, on account of the serious nature of the operation, to enter the Newcastle Infirmary. Here she was seen by Mr. Rutherford Morison and as his opinion both as regards the diagnosis and line of treatment was similar to that which has just been expressed the patient was placed under his care.

Operation was performed by Mr. Morison on Jan. 31st, 1901. Chloroform was the anæsthetic used. The patient was placed in the Trendelenberg position and kept thus throughout. After disinfecting the skin of the abdomen and vagina as far as possible an incision was made commencing three inches above the umbilicus and carried to the pubes; the uterus was turned out and the abdominal cavity was packed off with sponges. The infundibulo-pelvic ligaments on either side were ligatured and divided along with the lateral portions of the broad ligaments. The uterine arteries were held between the fingers and thumb of an assistant. The womb was opened by a vertical incision from the fundus downwards and the child was extracted. The placenta was observed lying to the left and posterior part of the fundus. An elastic ligature was tied round the uterus just above the cervix and the upper segment was cut away. There was very little bleeding at this stage of the operation. The placenta was not removed. The broad ligaments were next cut through and the uterine arteries were clamped and cut. These vessels were unusually large and their cervical branches bled freely. Many large veins had to be clamped and tied. An attempt to remove the diseased cervix by the vagina was not persisted in and it was removed from above. All the disease seemed to be eradicated, for, so far as could be seen, the broad ligaments and peri-uterine tissues did not appear to be infiltrated. The extra-peritoneal part of the pelvis was packed with antiseptic gauze and part of this was brought down into the vagina. The peritoneum was sutured with continuous catgut over the stumps of the broad ligaments and the gauze, thus completely closing the pelvic peritoneum. The abdominal wall was completely sutured in layers with catgut. The patient stood the operation well. The infant was a healthy female of eight months. On removal from the uterus she was cyanosed and did not breathe, but under the attention of Dr. W. Simpson, senior house physician, life was soon restored. The operation lasted one hour and 50 minutes. Both ovaries were removed along with the womb.

For the first few days after the operation the patient progressed very satisfactorily. Beyond occasional sickness all seemed to be going on well until Feb. 11th, when on dressing the abdominal wound it was noticed that while the lower part of the wound had perfectly healed a loop of small intestine about six inches in length was seen protruding through the upper part of the incision; it was reddened and bled easily and on its surface a few flakes of lymph were noticed. The bowels had been freely moved—rather purged than otherwise, the stools being offensive. The exposed gut was washed with boric lotion; the omentum was found adherent to the edges of the incision; this was separated and returned along with the intestine into the adbominal cavity and the incision was closed with through-and-through silkworm-gut sutures. The progress after this continued to be satisfactory for a period. On March 18th a small vesico-vaginal fistula was detected but it gave the patient very little trouble. The abdominal incision had practically healed. Both the mother and the child were remarkably well and were leaving the infirmary that day. Mr. Gray Turner, surgical registrar, who examined the cervix microscopically, reported: "Epithelioma; quite characteristic." On May 6th Mr. Turner wrote to Dr. Oliver: "Mrs. —— was at the infirmary to-day. She looks well and strong; the abdominal incision is sound. The vesico-vaginal fistula is healed and there is no sign of recurrence. The baby is flourishing."

Remarks by Dr. OLIVER.—There are few things more distressing to a medical practitioner than for him to find one of his patients who is the mother of a large family the subject of cancer of the uterus and approaching the end of pregnancy. The detection of cancer of the neck of the uterus in the first two or three months of pregnancy is a much less formidable matter, especially if the disease is limited to the cervix, and in most of these cases it will be limited, for were it at all advanced the foul discharges would of themselves be sufficient to prevent conception taking place. In such a case, with malignant disease limited to the cervix, there is no need to delay operation. Total extirpation of the uterus by the vagina is at once called for. But when pregnancy is far advanced the case is quite different. There is a temptation to allow the pregnancy to go to term and for the practitioner to buoy himself up with the hope that by application of the forceps or by turning the dangers that are incidental to a tedious labour may be averted, and when the confinement is over that the diseased uterus can then be dealt with. But is there any ordinary certainty that the life of the mother will be spared to term and that her child will then be still alive? Too often the hæmorrhages are so profuse that the mother becomes exhausted or she becomes poisoned by absorption of her discharges. There are few obstetricians who will deny that carcinoma advances in a pregnant uterus much more rapidly than in an unimpregnated uterus. By allowing the pregnancy to run its course and the disease to make further progress we make labour more difficult owing to the unyielding tissues of the cervix and more dangerous to the mother in consequence of the friable nature of malignant structures, their tendency to tear, and for the rupture to extend into the uterus and to cause death by shock and hæmorrhage. Of 180 cases of carcinoma of the uterus in pregnant women collected by Herman in 11 the uterus ruptured. Cohnstein has reported 14 cases in which women died undelivered, 13 being at full time and 1 in the seventh month of pregnancy. Although in the later stages of pregnancy Cæsarean section with abdominal hysterectomy is a line of treatment to be carefully considered in these cases, it is only right to mention that surgeons have removed the uterus per vaginam as late as the seventh month of pregnancy. I am in favour of the abdominal method and also of not allowing the pregnancy to go to term. The case which we have reported was fortunately one in which, although the cervix was much destroyed by cancer, the fornices were clear. The successful result shows that for this case at any rate the proper treatment was adopted.

AT the Bedwellty (Mon.) School Board election held on May 20th, Mr. Howell Thomas Evans, M.R.C.S. Eng., L.A.H. Dub., D.P.H. Cantab., J.P., was returned at the head of the 13 successful candidates.

Medical Societies.

CLINICAL SOCIETY OF LONDON.

Traumatic Subdural Hæmorrhage successfully treated by Operation.—Extreme Dilatation of the Left Auricle of the Heart.—Acute Suppuration of the Thyroid Gland Complicating Typhoid Fever.—Annual Meeting.

A MEETING of this society was held on May 24th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Dr. RISIEN RUSSELL and Mr. RAYMOND JOHNSON made a communication upon a case of Traumatic Subdural Hæmorrhage in which convulsions, occurring on the sixth day, were successfully treated by operation. The patient was a man, aged 33 years, who fell down a flight of stone steps. The immediate symptoms were those of concussion and there was a superficial scalp wound in the left parietal region. During the five days which followed the injury there were no noticeable symptoms, but on the sixth day convulsions supervened, which were frequently repeated and involved the left side of the body, spreading across to the right side of the face and right leg, and in some of the most severe fits to the right arm. There was a strong family history of epilepsy and the urine contained albumin. In consequence, however, of the distribution of the convulsions, the presence of the extensor response, and of marked left-sided paresis between the fits, the existence of an irritative lesion of the right motor area of the cortex was diagnosed. After the inhalation of chloroform and the administration of chloral and bromide of potassium had failed operation was decided upon. The trephine was applied over the right Rolandic area and several drachms of dark blood were evacuated on incising the dura mater. The surface of the brain presented no unusual appearances beyond very slight bulging. No convulsions occurred after the operation. The paresis of the left side of the body became gradually less and the muscular power became perfect a month after the operation. No satisfactory explanation was offered for the long delay in the incidence of the symptoms. They could hardly be regarded as the result of spreading cerebral œdema because there was no evidence of any laceration of the brain substance.

Dr. ISAMBARD OWEN and Dr. W. J. FENTON communicated a case of Enormous Dilatation of the Left Auricle of the Heart. The capacity of the auricle was 30 ounces; its greatest diameter was six and a quarter inches, exclusive of the appendix, which was also greatly dilated. Its walls were extremely thin but healthy in structure; the pericardium was adherent to the auricle posteriorly. The other cavities of the heart were dilated, but to a more or less extent, the ventricles being also hypertrophied. The mitral orifice admitted four fingers and the edges and cords were somewhat contracted, but no other evidence of former endocarditis was present. The heart and pericardium occupied the entire cavity of the thorax below the level of the fourth ribs in front, the pericardium being adherent to the right parietal pleura from the spine to the anterior axillary line. The diaphragm and liver were greatly depressed. The patient, a woman, aged 40 years, was admitted to St. George's Hospital last November with urgent dyspnœa. The apex-beat of the heart was found to be in the eighth space and in the posterior axillary line; a heaving impulse was felt over the front of the chest. A systolic murmur and a sharp second sound were heard over the front of the chest, culminating at the apex. A presystolic murmur was also occasionally heard. Loss of vocal fremitus, as well as of percussion resonance and stethoscopic sounds, being found over the right base and flank, paracentesis was performed in the sixth space and mid-axillary line. Pure blood resulted, the trocar having penetrated, as was afterwards found, the left auricle of the heart. The operation was at once suspended. The patient appeared none the worse for the occurrence and survived for three and a half days, dying eventually from asphyxia due to compression of the lungs. On subsequent examination, pulsation, except at the apex, was found limited to the front and part of the flank of the right chest. Over a part of this area was felt a systolic thrill, culminating near the right nipple, where also the systolic murmur had a second culminating point. The patient, it was found, had been in the hospital with cardiac symptoms in 1888 and 1898. On the former occasion the symptoms were stated to be of six years' duration, having begun at the age of 22 years. There had been an attack of rheumatic fever in childhood. On this occasion the condition was not distinguishable from one of mitral stenosis. On the second occasion the apex-beat had advanced to the seventh space and mid-axillary line. There were marked pulsation in the lower part of the right side of the chest and a systolic thrill best felt just below the right nipple. A faint thrill was occasionally felt at the apex and a systolic murmur culminated at the apex, the second sound being reduplicated. In the aortic area the first sound was impure and the second was clear. There was no rumble or snap. There was marked pulsation of the lower ribs on the right side, with a systolic thrill most marked just below the right nipple. Pulsation was seen in the fourth space above the right nipple. The front and flank of the right chest were dull up to the fourth rib and a loud systolic murmur was well heard over this region. Vocal fremitus was absent from the dull area. The posterior base was resonant, but other pulmonary signs were deficient. The systolic murmur was heard at the angle of the left scapula. The liver was pushed downwards on this occasion and aneurysm was suspected, but no certain diagnosis was arrived at. She had begun to suffer from severe and increasing dyspnœa with pain in the right side of the chest six weeks before her final admission in 1900. Dr. Owen suggested as the first origin of the dilatation of the left auricle the adhesion of the pericardium to its wall. The main difficulty of diagnosis lay in the fact that the possibility of such a condition as existed was not suspected. The possibility being revealed the significance of the physical signs were apparent. As far as he knew the case stood alone, but he proposed to make inquiries as to the existence of similar specimens elsewhere and to lay the results of his inquiries (if any) before the society.—The PRESIDENT remarked on the extreme rarity of the case and asked if any relief ensued from the paracentesis.—Dr. W. EWART remarked that he had seen the patient during life. It was a very rare, if not a unique, condition and it was to him a most interesting one as throwing some light on the mechanism of auricular dilatation in cases of disease of the mitral orifice. In mitral stenosis auricular dilatation was generally attributed to the backward accumulation of blood in the right ventricle. But how was it that in some cases of extreme mitral stenosis there might be hardly any dilatation of the left auricle? The causation of the dilatation was undoubtedly obstruction, but this was situated, he thought, in the present instance, as in many other cases of mitral stenosis, not so much at the mitral as at the aortic orifice. The contracting force of the left ventricle was thus exerted backwards and auricular dilatation ensued.—Dr. SIDNEY COUPLAND thought that in view of the enormous size of the auricle in this case there was another factor in the dilatation—namely, inherent weakness in the auricular wall. The dilatation was, in short, rather of the nature of an aneurysmal one.—Dr. OWEN, in reply, agreed with Dr. Ewart that both the pulsation and the dilatation of the auricle were due to ventricular contraction. The microscope did not reveal degeneration in the muscular tissue of the heart.

Mr. RICKMAN J. GODLEE read a paper on a case of Acute Suppuration of the Thyroid Gland complicating Typhoid Fever. The patient was a young woman, aged 20 years, who was attacked with typhoid fever at the end of October, 1900. On Nov. 20th a swelling formed at the lower part of the neck, followed by a patchy irritable rash all over the body which disappeared on the 26th. The swelling, however, rapidly increased in size and her temperature rose, reaching 104·4° F. on the 28th and 105·4° on the 29th, the pulse rising to 140. There had been a moderate degree of swelling in that situation for some years. When first seen by Mr. Godlee the swelling occupied the middle line and extended somewhat to the right but much further to the left. There was difficulty in swallowing and the surrounding structures did not move freely over the swelling. There was no movement of the mass on deglutition. An incision was made in the middle line and a cavity was reached half an inch within the gland, which was of large size. It contained a reddish-brown, sticky fluid, mixed with pus, and much friable material. The bleeding was free but not alarming. A drainage-tube was inserted and a cyanide dressing was applied. The patient was much more comfortable after the operation. Recovery was uneventful and in

March she was restored to perfect health. Mr. Godlee discussed the different varieties of thyroid inflammations: (1) idiopathic with spontaneous subsidence; (2) epidemic, as described by French military surgeons, of the nature of an acute specific fever; and (3) the septic form, of which this case was an example. Acute suppurative thyroiditis had been recorded as occurring in connexion with many infectious and septic states, such as rheumatic fever (eight cases), malaria (three cases), typhoid fever (two cases), diphtheria (two cases), erysipelas, pneumonia, ozæna, compound fracture, and erythema nodosum. Of 28 recorded cases suppuration occurred in 15, and in six others this point was not mentioned. He suggested that the rheumatic cases ought, perhaps, to be placed in a separate category, as these did not suppurate. It appeared to be especially common in connexion with typhoid fever, and the proper treatment was immediate opening and drainage. There did not appear to be much danger of serious hæmorrhage. The affection was not included among the complications of enteric fever in the current medical text-books, as it ought to be.—Mr. CHARTERS SYMONDS remarked that he had not seen this form of thyroiditis, but he had seen one case of acute thyroiditis accompanied by dyspnœa and swelling which proved to be, when operated on later, a cyst. He had seen one case of gummatous thyroiditis and he had met with a case in which there were several foul abscesses lying around the gland, but so far as he knew they did not lie within the gland.—Sir THOMAS BARLOW recalled the case of a young woman the subject of a small goitre who contracted typhoid fever. The goitre swelled up and tracheotomy was performed, but the patient died. There was no true suppuration—it was a cystic process. He thought that in many of these cases the inflammation took a hæmorrhagic form similar to that which took place in hæmorrhagic pancreatitis.—Mr. GODLEE, in reply, wished to emphasise the fact that in most of these cases the inflammation supervened in a gland already diseased. The thyroiditis generally supervened in typhoid fever during the stage of convalescence.

The annual meeting of this society was then held. The report of the council, read by the secretary, showed the society to be in a prosperous condition, the membership now amounting to 610. The treasurer's report was then presented. There was an increase in the expenditure, but only commensurate with the usefulness of the society. Both of these reports were adopted. Various alterations in the rules, as recommended by the council, were passed. Votes of thanks to the President, the Vice-Presidents, and Council, the retiring secretary (Mr. Charters Symonds), and other officers were passed with acclamation. The result of the ballot showed that the officers and council for the ensuing year, as nominated by the council, were duly elected as follows:—President: Mr. F. Howard Marsh. Vice-Presidents: Dr. Stephen Mackenzie, Dr. Vivian Poore, Dr. W. Joseph Tyson, Mr. A. E. Barker, Mr. R. Clement Lucas, and Mr. Herbert W. Page. Treasurer: Dr. Frederick Taylor. Council: Mr. J. Kingston Barton, Dr. J. Rose Bradford, Dr. J. Mitchell Bruce, Dr. C. W. Chapman, Dr. J. K. Fowler, Dr. S. H. Habershon, Dr. H. P. Hawkins, Dr. J. A. Ormerod, Dr. H. D. Rolleston, Dr. A. F. Voelcker, Mr. Gilbert Barling, Mr. W. H. Battle, Mr. Leonard A. Bidwell, Mr. Stanley Boyd, Mr. L. A. Dunn, Mr. F. S. Eve, Mr. Raymond Johnson, Mr. John D. Malcolm, Mr. H. Betham Robinson, and Mr. Charters J. Symonds. Honorary secretaries: Dr. Percy Kidd and Mr. Anthony A. Bowlby.

HARVEIAN SOCIETY OF LONDON.

Congenital Morbus Cordis.—Spastic Paralysis and Friedreich's Disease after Operation.—Cerebellar Ataxy.

A MEETING of this society was held on May 16th, Dr. D. B. LEES, the President, being in the chair.

Dr. E. CAUTLEY showed a girl, aged 13 months, with a Loud Systolic Murmur over the Præcordium. The murmur was loudest in the left third interspace near the sternum and was conducted upwards, downwards, and outwards. It was loud at the apex, in the fifth space in the nipple line, and was heard all over the back of the chest, being louder on the left side of the spine. There was slight evidence of hypertrophy of the right ventricle. There was no clubbing of the extremities and neither cyanosis nor anæmia. The child had no symptoms of heart disease and was well nourished. She was the third living child out of seven. No history of congenital syphilis had been obtained. The murmur had not varied during the nine months the child had been under observation. Dr. Cautley thought there was probably a deficiency in the interventricular septum.

Dr. CAUTLEY also showed a boy, aged 13 years, as a case of Direct Communication between the Aorta and Pulmonary Artery with possibly other deficiency present. The case illustrated the connexion between congenital heart disease and inherited syphilis. He was the eighth child, one of twins, the other being undeveloped. The seventh was stillborn, while the mother was in hospital for syphilitic disease of the throat. The sixth child was healthy up to six years of age and then became blind and imbecile. The patient exhibited other congenital abnormalities—namely, hypospadias and deformity of the toes. He was small for his age, very thin, and had notched, pegged teeth. The heart's apex was in the fifth space, in the nipple line, and there was evidence of some hypertrophy of the right ventricle. Over the second and third left interspaces were a double thrill and murmur, chiefly systolic, and corresponding murmurs extending over a fairly wide area. The sounds were clear at the apex. The pulse was 96, small, and soft. There was no clubbing, cyanosis, or anæmia, and the boy had no symptoms of cardiac distress. Dr. Cautley remarked on the difficulties of accurate diagnosis in these cases and thought it of importance especially in view of prognosis. He regarded congenital syphilis as a more common cause of cardiac abnormalities than intra-uterine endocarditis.—With reference to the second case Dr. G. A. SUTHERLAND agreed with the diagnosis of congenital disease, probably a communication between the aorta and pulmonary artery. The loud, rumbling, double murmur, in which he thought the diastolic part was much more pronounced than the systolic, the thrill, and the situation of the murmur, all supported this view. The opening was probably a small one, as no great admixture of venous and arterial blood seemed to be present.—The PRESIDENT commented on the difficulty of accurate diagnosis in cases of this kind and thought the explanation given of the murmurs in the present instances was the correct one. He had recently seen a patient with physical signs like those of the second case and post mortem a communication was found between the aorta and pulmonary artery.

Mr. JACKSON CLARKE showed a boy, aged six years, on whom he had operated in April for Severe Spastic Paralysis. All deformity had been removed and the patient could stand alone, and with the aid of an instrument, the structure of which was demonstrated, he already began to walk, and although the gait was somewhat stiff it had none of the previously pronounced spastic features.—Mr. CLARKE, in reply, said that his observations led him to conclude that the benefits obtained in these cases were permanent. If spasm recurred it was within a few weeks of operation, and was merely an indication for a more extensive removal of tendon. In one case where the operation had been done 20 years ago no return of the spastic condition had occurred. In certain cases the relief of the spasm was complete, and after a time the patient could dispense altogether with instruments.—Mr. JACKSON CLARKE also showed a boy, aged nine years, who had suffered from extreme Deformity of the Feet due to Friedreich's Disease. He had never walked well and just previously to operation had ceased to be able to walk at all. To correct the deformity the plantar fascia and short plantar muscles, and on a subsequent occasion the tendo Achillis and the tendons of the long flexors of the toes and those of the tibiales muscles, had been cut. The boy could now walk in comfort and was free from any danger of return of the deformity, and though the progress of the disease could not be arrested the patient would be able to walk about for some years.—Mr. NOBLE SMITH stated that although many cases of severe spastic paralysis were unsuited to operation, there were yet a certain number which could be distinctly benefited by tenotomy. The case shown by Mr. Jackson Clarke exemplified this fact, and he (Mr. Noble Smith) had seen several instances in which children previously unable to walk at all had been enabled by operation to get about in a manner on their feet. They must not expect brilliant results in such cases, but they could realise the enormous difference both to the patient and the parents between absolute inability to move about and the possession of the power to walk, however little. He had seen improvement in cases after operation, not only in respect to powers of locomotion, but also as

regards a lessening of spasm. He also had noticed an improvement in the mental capacity of children whose brains had been affected.—The PRESIDENT and Mr. W. W. CAMPBELL WILLIAMS also took part in the discussion.

Mr. E. R. CLARKE showed (for Dr. H. A. CALEY) a boy, aged 10 years, suffering from Ataxy of a Cerebellar Type. The child was said to have been perfectly well until six weeks before, when, after a slight fall which caused the nose to bleed, marked unsteadiness of gait was noticed. Since that time on attempting to walk there had been a marked tendency to fall backwards, so that no progress could be made. He could not stand with his feet together; with his feet widely apart he could stand with difficulty. On shutting his eyes he invariably fell backwards. Excepting for occasional frontal headache, slight exaggeration of the right knee-jerk, and vomiting on one or two occasions, there had been no other symptoms, and the optic discs had remained normal. Latterly, the ataxy had lessened to some extent. Dr. Caley regarded the symptoms as referable to a lesion of limited extent implicating the middle lobe of the cerebellum; the possibility of a small hæmorrhage of traumatic origin had been considered, but the presence of a new growth or tuberculous mass was considered more probable. —Dr. SUTHERLAND found it difficult to form a definite opinion, but the evidence adduced of cerebellar disease was far from conclusive. The gait as demonstrated was not characteristic of cerebellar or of any other disease, and as muscular power was manifested in the lower limbs through other tests than the walking one he suggested the presence of a functional element in the case which might be amenable to treatment.—The PRESIDENT and Dr. CAUTLEY also commented on the case and suggested that the child should be brought before the society on some other occasion.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Patients and Specimens.

THE eighth meeting of this society was held on May 15th and was devoted to the exhibition of patients and specimens; Dr. A. G. MILLER, the President, was in the chair.

Dr. ALEXANDER BRUCE showed two patients. The first was a girl who exhibited almost complete Paralysis of the Right Brachial Plexus. The accident which produced it was peculiar in that the girl was working at a carding mill throwing lint on to a travelling band. No one saw how the accident occurred, but the girl remained unconscious for 20 hours. There was no external injury but complete loss of power in, and almost complete anæsthesia of, the right arm were manifest on her restoration to consciousness. The condition had not improved in the least since the accident but a progressive atrophy of the muscles had ensued. The galvanic current gave only a very feeble muscular reaction while there was none with the faradaic current. The right hand showed great lividity and coldness (being 14° lower in temperature than was the right hand) and there was transverse grooving of the nails. Over the region supplied by the circumflex nerve there was good sensation, as was almost invariably found in paralysis from rupture of the brachial plexus. The right shoulder was higher than the left, due to over-action of the trapezius. The injury to the first dorsal nerve at its root was shown by its action on the sympathetic nerve fibres going to the eye: the right palpebral fissure was smaller than the left, the eyeball was less prominent, and the pupil was smaller. There was flattening of the right cheek, which occurred very frequently in such cases and which was difficult to explain. The serratus magnus and the rhomboid muscles had escaped paralysis. The second case was one of Disseminated Sclerosis occurring in a young woman, aged 22 years. The disease had lasted for two years and now she was almost unable to walk. The intention tremors were most marked, as was also nystagmus.

Dr. BYROM BRAMWELL exhibited two cases. The first was that of a sailor, aged 41 years, with a peculiar form of Muscular Atrophy. The affection began two and a half years ago after the patient had slept in the open air all night. Loss of power was first noted in the muscles belonging to the left big toe, from which it spread to the neighbouring muscles. Two or three months later the right foot became similarly affected. About nine months subsequently the right and then the left hand became paralysed. He was unable to feed himself and could hardly walk; he also suffered from some cramp-like pains in the legs. His health was otherwise perfect and there were no sensory disturbances or affection of the bladder or rectum. The condition remained stationary for about a year and then improvement commenced, so that he could now walk two or three miles, though with a duck-like gait. There was still marked muscular atrophy. The disease was not the ordinary form which began in the hands and only later extended to the feet. In this case it clearly began in the feet and even now affected only the muscles below the elbow and knee-joints. The gait was characteristic of paralysis of the muscles of the front of the leg. The diagnosis was difficult owing to the peculiar distribution and mode of origin of the disease. It was not ordinary peripheral neuritis and there had never been any muscular tenderness. The question of its being beri-beri was discussed and excluded. A few German authors had described similar cases. It was evidently a distinct type of disease. The knee-jerks were rather diminished. The second case was one of Syringomyelia. The man was admitted to the ward on account of Bright's disease. While there it was noted that the small muscles of the hands (especially on the left side) were markedly atrophied; the fingers had the claw-like appearance. The same condition was present in the right hand and it extended in both cases to the forearm. Tactile sensation was good but that to painful impressions was entirely lost in that part of the skin extending upwards from the umbilicus. The sensations to heat and cold were less markedly altered. There were painful sores on the hands and scars of burns on the back due to his sleeping on a hot boiler, the heat of which he was unaware of. His head was not symmetrically shaped. It was a case of syringomyelia and such cases were very often mistaken for progressive muscular atrophy.

Dr. E. CARMICHAEL showed a man suffering from a Hypertrophic Condition of the Integument, probably due to distended lymphatics. The swelling extended from the right buttock down to the foot. The affection began eight years ago and now the right knee was completely disorganised.

Mr. FRANCIS M. CAIRD exhibited two patients. The first was a man, aged 51 years, who had undergone an operation for the Removal of the Pylorus. The patient had lost weight greatly and had an epigastric tumour. A test meal showed that he possessed an excess of hydrochloric acid and some lactic acid. The pylorus was closed, as was also the pyloric end of the stomach, while the jejunum was stitched up and made to open into the posterior part of the stomach. The man had improved greatly since the operation. The second patient was a man who had a very large Growth in his Epigastric Region and was greatly emaciated, weighing only 7 stones 10 pounds. A test meal showed the entire absence of hydrochloric acid. Posterior gastro-enterostomy was performed, but the tumour was left as the patient was excessively weak. The man has put on flesh rapidly and now he weighed 9 stones 6½ pounds, while the tumour had disappeared.

Mr. ALEXIS THOMSON showed a woman on whom he had performed Enterectomy for Multiple Tuberculous Strictures of the Small Intestine. The patient suffered from a chronic incomplete stricture of the small intestine which might be either tuberculous in nature or even invagination of the bowel. Visible peristalsis was noted. The woman had suffered from inflammation of the bowels nine years previously. On opening the abdomen a number of enormously distended coils of intestine were seen, along with great matting and miliary tubercles on the serous surfaces. There were about five tuberculous strictures, none of which would admit the tip of the little finger. Mr. Thomson had removed 22 inches of bowel in two stages, first making a fistula and clearing out the bowel and later resecting the intestine.

Dr. FRANCIS BOYD showed a young woman suffering from Stenosis of the Pulmonary Valves. She was admitted to the Deaconess Hospital suffering from rheumatic fever and exophthalmic goitre. The murmur was systolic in time with its point of maximum intensity in the second left interspace. There was no cyanosis as happened when the lesion began during fœtal life. The patient had a previous attack of rheumatic fever and probably the lesion dated from that time.

Mr. HAROLD STILES showed a boy after operation for Idiopathic Cerebral Hæmorrhage. The symptoms were those of ordinary apoplexy occurring while the boy was perfectly well. He had been rather unable to do his sums or to read

well while at school. In the afternoon he felt dizzy and had nine convulsions between 5 P.M. and 2 A.M. when he developed left-sided hemiplegia. He was never entirely unconscious. Next morning he had somewhat improved in mental condition though the paralysis was as marked. There was no history of traumatism. It was at first thought to be an aberrant case of tuberculous meningitis, but as his symptoms did not improve Mr. Stiles trephined over the right parietal bone as it was there that he had complained of pain. On opening the dura mater the brain bulged far outwards and cracked in two places, giving exit to several blood-clots. On introducing the finger several more clots were felt in the ventricles and these were scooped out. Next morning the boy was much more conscious and he stated that the pain was gone. There was a very great flow of cerebro-spinal fluid for a few days, but in eight weeks the wound had entirely healed and now there was no trace of paralysis.

Mr. J. M. COTTERILL showed two cases. The first was that of a woman with a deep Rodent Ulcer under treatment by the x rays. The disease developed six years ago and three years ago the right eyeball had to be removed as well as part of the bone. It remained healed for 18 months when it recurred. The treatment by the x rays had been continued for four weeks, during which time the ulcer had greatly improved, the pain being much less, the fœtor less marked, and the edges beginning to cicatrise. The second case was a Joint Affection in a Hæmophilic Lad. The left elbow presented many of the appearances of tuberculous disease, but there was no pain on pressure. Several years ago the same patient presented himself with exactly a similar condition in the knee-joint. It was learned that he was a bleeder and so Mr. Cotterill did not think it advisable to operate. He introduced a trocar into the knee-joint and withdrew blood. Ultimately the knee-joint recovered perfectly. The swellings in both knee and arm had persisted for long and both were probably due to long-continued bleeding into the joints.

Dr. A. SCOT SKIRVING showed: (1) A Brain showing the track of a Mauser bullet completely traversing the organ; (2) a Brain from a case simulating Rupture of the Meningeal Artery; (3) specimens illustrating the Effect of Bullet Impact; (4) a Stomach nine days after Operation for Perforation; and (5) a large Perineal Tumour (five pounds in weight) from a man, aged 80 years, who had carried it all his life.

Dr. BRUCE showed microscopical specimens and photographs of (1) Progressive Muscular Atrophy; (2) Amyotrophic Lateral Sclerosis; and (3) Glioma of the Pons.

Mr. CAIRD showed: (1) A Tumour of the Pylorus; (2) Vesical Calculi; and (3) Vesical Papillomata.

Mr. THOMSON exhibited: (1) Two Feet of Small Intestine showing four tuberculous ulcers; and (2) a form of Syringe for Iodoform Injections, &c.

Dr. LOGAN TURNER showed: (1) Two Casts showing Congenital Malformation of the Auricle; and (2) a Larynx from a case of Primary Laryngeal Diphtheria.

Mr. STILES exhibited: (1) Intestines from a case of so-called Idiopathic Distension of the Colon; and (2) Sarcoma of the Testicle from a child, aged 14 months.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on May 17th, Dr. Patrick Manson, the President, being in the chair.—Dr. E. Klein read a paper, which under the title of "What is Plague?" was a description, illustrated by lantern slides, of the bacteriological characteristics of typical Oriental plague. He imagined that when the plague was raging as an epidemic there could be no difficulty in its diagnosis by men familiar with its clinical and pathological features, nor much when well-marked cases occurred on board a vessel arriving from a plague-infected port, but there were circumstances under which a diagnosis could not be made without the aid of the bacteriologist, though happily the evidence thus afforded was unmistakeable. Dr. Klein then described two such cases in which the evidence was positive and one which led him to a negative conclusion. The first was that of a sailor on board a vessel arriving in the port of London from Japan, Manila, and Hong-Kong, who had had for four weeks a huge swelling in the right groin that had suppurated and when incised discharged a quantity of foul grumous pus. The next was that of a Lascar, who, taken ill on Feb. 26th, was landed at a south-western port on March 12th, and, the vessel having obtained *pratique*, he was sent to the general hospital, the bubo being regarded as traumatic. In neither case had the patient been isolated, but none of the crew had been infected. The Lascar had a temperature of 103° F., and the disease had already assumed the septicæmic type. Pus from each case was sent to Dr. Klein, who found, among other bacteria, many which were typical of plague, the diagnosis being verified by subcutaneous and inoculation experiments. The third case was that of a boy who had never left London and was admitted into a hospital with inflamed glands. There was no evidence of the possibility of plague infection beyond the fact that his mother was a dealer in rags and old clothes, but cultures, subcultures, and inoculation experiments, with the bacteria, obtained first from the juice and later from the pus of the glands, alike gave negative results. The conflicting statements as to the infectivity of plague were easily explained by the difference between the types of the disease. In the pneumonic form the pulmonary exudation and expectoration teemed with the bacillus; in the septicæmic or hæmorrhagic types they swarmed in the blood, and hæmorrhages took place through the mucous membranes of the respiratory, alimentary, and urinary organs, but in the bubonic type they were rarely found in the blood and were practically limited to the spleen and lymphatic glands, so that until the bursting of the glands and the escape of the pus the possibilities of infection were small. In his experience the bacilli did not, as had been alleged, disappear when suppuration took place, and he felt that the failure to recognise the true nature of a non-venereal bubo might lead to disastrous results. For instance, a seaman discharged in the Tyne on Oct. 4th from a vessel arriving from Rosario travelled thence to Llandaff where he was taken ill and sent to the General Hospital on Oct. 2nd, dying some days later from plague. Had the abscess burst previously he might have been the centre of an outbreak of plague in the places where he happened to be at the time. The bacillus pestis was morphologically fairly characteristic, blunt, straight, thick, with the protoplasm staining at the ends, leaving the middle third lighter. It did not liquefy gelatin but formed colonies with filmy margins and angular outlines. In ghee broth the cultures formed a layer on the surface sending downwards stalactite-like prolongations and on the least agitation falling to the bottom of the flask like a shower of snow. The bacilli secreted a viscid material by which they adhered in clumps and to such an extent in agar that the culture could not be emulsified. It was therefore impossible to verify agglutination in broths, but this adhesive material was dissolved by salt, and gelatin cultures could be then emulsified in the physiological solution, in which the blood-serum of animals that had suffered from plague caused unequivocal agglutination in from 10 to 15 minutes when added in the proportion of 1 in 20, normal blood having no such action. He had prepared a number of guinea-pigs by three successive injections of sterilised salt emulsions, and two of mild living cultures, and with their serums he had produced almost instant agglutination of the bacilli in cultures obtained from every part of the world. He had not yet had an opportunity of applying this test to suspected cases of plague in man, but in the preparation of Hoffmann's anti-pest solution he had been able to test the samples, rejecting such as failed to confer agglutinative properties on the serum of animals inoculated with them.—Mr. J. Cantlie said that while there was no difficulty in recognising the marked types it was otherwise with the milder, and among the seven separate invasions during the past year he had been unable, except at Glasgow, to diagnose clinically any of the cases; three, indeed, had turned out to be leucocythæmia, glanders, and enteric fever. All cases of fever with enlarged glands, not venereal, should, however, be deemed suspicious, and he believed that some of these, one of which he described, might be cases of pestis minor, being indistinguishable from those that in the East, preceded, accompanied, and followed epidemics.—Dr. E. J. McWeeney of Dublin suggested that even if they did not fulfil Dr. Klein's bacteriological requirements they might develop into the true plague, that the virus *vires acquiret eundo*.—Dr. Herbert Williams said that cases such as those mentioned by Dr. Klein might easily escape recognition, the more so since 5 per cent. of Lascars had enlarged inguinal glands, but whenever there was suppuration or fever they were detained in the hospital of the Port of London and the contents of the glands were sent to Dr. Klein, when

nearly all proved to be plague. It must not be forgotten that a venereal history did not exclude plague.—Dr. P. T. Adams remarked that at Bombay the plague was most prevalent in the cold season and during the monsoon when the cold or the rain led to overcrowding indoors. He believed that the infection nearly always gained access by some lesion, external or internal, as of the bare feet, or, in the case of the pneumonic form, catarrhs of the air-passages. Haffkine found that the bacillus was enfeebled by exposure to light and air.—Dr. Reginald Farrar could confirm the feeble infectivity of the bubonic type, nearly all the cases he had seen among Europeans having been pneumonic. The only exceptions were the little daughter of an officer who had been bitten by a sick, probably plague-infected, squirrel and a friend of hers, both of whom died. Visitors to the hospital very rarely contracted it; it seemed to cling to the soil. Formerly the population used to migrate *en masse*, but now they often remained in the infected houses.—Dr. Bulstrode asked Dr. Klein what evidence he deemed conclusive and whether bacteriologists like himself were ever in doubt as pathologists and clinical observers often were? He would like to know Dr. Williams's definition of an infected port, for he believed that epidemics mostly spread by unknown channels.—Dr. Turner had been sent to inspect some 30 cases in Queensland, mostly among Europeans; the majority were bubonic, one only was pneumonic, and but few were septicæmic. In none could he trace direct personal infection, except, perhaps, in the case of a post-mortem room porter. There not one of from 300 to 400 "contacts" contracted the disease, and very few of the thousands at Sydney. In Brisbane, Port McQuarie, and Cairns the rats were affected before the people were.—The President said that though Dr. Edington had stated that the rats were not affected at Cape Town, Dr. W. J. Simpson had found numbers of dead ones under the floor of infected houses and that it was an error to believe that the fleas of rats did not attack man. Doubtless, like those of dogs and fowls, they preferred their respective hosts, but like these they would bite man in default of their natural prey.—Dr. Klein, replying, stated that Dr. Edington now admitted the mortality among rats at Cape Town, and had sent cultures obtained from them to several bacteriologists, including himself. There was no doubt as to their being true plague bacilli, Dr. Edington's failure to recognise them having been due to his employing unsuitable media. As to the evidence he relied on that derived from cultures and subcultures confirmed or negatived by inoculation experiments, to which in future he would add the serum or agglutination test; when these agreed there could be no room for doubt.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—An ordinary meeting of this society was held on May 17th at the Victoria Hospital for Children, Chelsea, S.W., Mr. D'Arcy Power being in the chair.—Mr. W. J. Susman exhibited, for Dr. Walter Carr, a case of Anæmia Infantum Pseudo-leukæmica. The child was admitted in January, 1901, and the spleen then reached down to the pubes, while the blood showed the characteristic changes described by von Jaksch in 1890. At the present time the spleen could be felt two inches below the costal margin. Cod-liver oil, iron, and mercury had been administered.—Dr. Wayland C. Chaffey inquired whether the remarkable reduction in the splenic enlargement was attributed to medicine or to diet.—Dr. Edmund Cautley thought such cases were unconnected with rickets or syphilis. The prognosis was extremely favourable.—Mr. Susman, in reply, said that beyond a "hot-cross bun skull" the patient showed no sign of either syphilis or rickets. In the treatment of these cases Dr. Walter Carr placed considerable dependence on iron.—Mr. Susman showed, for Dr. Montague Murray, a case of Spastic Paraplegia with Cerebral Symptoms. The disease followed whooping-cough and fright at the age of four years. There was no history of congenital syphilis. The symptoms included loss of power in the legs and to a less extent in the arms, a spastic gait, increased reflexes, widely dilated pupils, and defective intelligence. They could not apparently be classified under any recognised disease.—Dr. Edmund Cautley regarded the case as one of cerebral sclerosis, probably set up by encephalitis due to some infective fever. It resembled, he thought, the group of cases originally described by Little.—Mr. Alfred H. Tubby suggested a cerebral diplegia as the cause of the symptoms. It was important to distinguish such cases from Little's disease. Prognosis was bad.—Dr. J. Blumfeld inquired why the pupils were dilated.—Mr. Susman, in reply, said that nothing abnormal could be detected in the fundus oculi and no explanation could be offered of the dilated pupils, which reacted to light and to accommodation.—Mr. D'Arcy Power showed a case of Sporadic Cretinism which had been under the care of Dr. Wallis Ord in 1893.[1] The patient was now 11 years of age, and thyroid extract had been given for eight years. The child showed practically no signs of cretinism and was in the third standard at school.—Dr. Robert Hutchison remarked that under thyroid treatment there was generally greater improvement in the bodily than in the mental condition. But the present case proved how much might be done to improve the intelligence if treatment was commenced early in life.—Mr. Power, in reply, said that four and a half grains of thyroid extract had been given per diem.—Mr. D'Arcy Power showed a lad, aged nine years, who had suffered from Paroxysmal Hæmaturia and Albuminuria with Attacks of Renal Colic. The symptoms improved when the patient was in hospital, but they recurred when he returned to school. Hoping to find a stone Mr. Power had explored the right kidney by the lumbar route, but no obstruction was found either in the kidney or in the ureter. The wound speedily united, and the lad was on the eve of leaving the hospital when he showed signs of scurvy. This yielded to the ordinary remedies and there had been no recurrence of renal symptoms.—Dr. G. A. Sutherland thought that the hæmaturia, but not the pain, might be explained by scurvy. Was there any hæmoglobinuria in the case?—Dr. George Carpenter said that hæmaturia was not uncommon in children and that it usually got well under hospital dietary.—Dr. Blumfeld remarked upon the fact that the child developed scurvy whilst in hospital.—Mr. Power, in reply, stated that there was no hæmoglobinuria. The child was only a week or so in hospital before he showed signs of scurvy, which was possibly determined by loss of blood. The patient also passed mucus and blood by the bowel.—Mr. D'Arcy Power showed a child with a large Artificial Anus in the scrotum, following an operation for irreducible hernia.—Dr. George Carpenter read an abstract of his Investigations upon the Urine of an Infant from the age of 27 days onward. The fluid was systematically collected and was found to average 19½ ounces in the 24 hours, the largest quantity passed at any one time being four ounces. The specific gravity was generally from 1001 to 1002, never above 1005; a trace of albumin was invariably present. The quantity of urea was notably small, usually from a quarter to one-sixth of a grain per fluid ounce; the total amount passed in 24 hours varied from two and four-fifths grains to four and a half grains, averaging three and a half grains. Casts were not found. Dr. Carpenter gave an abstract of earlier observations on the subject, his own figures being on the whole considerably lower than those previously recorded.—Dr. Sutherland inquired whether the infant was in good health and breast- or bottle-fed.—Dr. Cautley requested particulars as to methods adopted in estimating urea and in searching for hyaline and granular casts.—Dr. Hutchison inquired whether the bodily weight was noted, since that would influence the proportion of urea. He had generally found that the amount of urea passed by infants was under-estimated. It was important to guard against any fallacy on the question of bottle-feeding.—Dr. Carpenter, in reply, said that the weight was not systematically recorded. The infant was bottle-fed, and took 20 ounces of fluid in 24 hours. Urea was estimated by Southall's bromide method. Casts were sought with the microscope after the urine had been carefully centrifuged.—The next meeting of the society will take place at Liverpool on Saturday, June 29th.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on May 21st, Dr. A. Wahltuch being in the chair.—Dr. A. T. Wilkinson demonstrated three cases of Lobar Phthisis and commented on the acute onset and chronic after-course of many such cases.—Dr. Milligan showed two cases of Tuberculous Disease of the Middle-ear and Adjoining Mastoid Cells. In the first case, that of a child, aged one year, the disease had lasted ever since the child was five weeks old and had commenced with painless origin, the first symptoms noted being discharge from the ear, very shortly afterwards followed by facial

[1] THE LANCET, Nov. 4th, 1893, p. 1114, Case 2.

paralysis. The peri-otic ganglia soon became enlarged and at the time that the child was admitted to hospital, five months after the commencement of the trouble, extensive disease within the middle-ear and mastoid process was found. Retro-auricular drainage was decided upon and at the present time satisfactory progress was being made, the treatment consisting mainly in antiseptic irrigation of the part. In the second case there was no facial paralysis; operative interference was undertaken with satisfactory results. A case of Lupus of the Right Nasal Chamber and of the Right Half of the Larynx was also shown. The patient, a female, aged 25 years, had suffered for three years and at the time of admission to hospital was complaining of considerable huskiness and slight stenosis of the right nostril. The right free margin of the epiglottis was infiltrated, numerous lupoid nodules being found upon its free margin, but no ulceration was detectable. Dr. Milligan made some remarks upon the course and treatment of tuberculous affections of the middle-ear and of the mucous membrane of the nose.—Mr. G. H. Lancashire exhibited cases of Tuberculous Skin Disease belonging to two pathological groups. 1. The bacillary tuberculides: skin lesions showing microscopically all the elements of tubercle, including bacilli, and therefore inoculable. (1) A case of lupus vulgaris of the nose which had commenced within the nares and spread externally by the nasal duct, showing remains of a dacro-cystitis; (2) A case of lupus verrucosus of the hand; (3) tuberculous ulceration, with epithelial proliferation, in the back of the hand, the result of a bite (glandular infection also along the arm); (4) extensive lupus vulgaris of the arm of 12 years duration apparently cured (six months ago) by pyrogallol dressings; and (5) scrofuloderma in the cheek of a child of typical tuberculous physique. There was no family history whatever of tubercle; the other children were healthy. 2. Toxin tuberculides in which the lesions presented giant-cells and epithelioid cells for examination, but no bacilli; not inoculable. One example only was shown—"papulo-necrotic toxi-tuberculide" as described by Hallopeau. Lesions were seen in groups, chiefly on the elbows and the knees. Small brownish-red papules with umbilicated necrotic centres were seen in various stages, among the earliest being a papule of the size of a pin-head and generally occupying the site of a hair follicle. Importance was attached to this group as indicating the presence of a tuberculous focus elsewhere in the body.

GLASGOW SOUTHERN MEDICAL SOCIETY.—A meeting of this society was held on May 9th, Dr. William Watson, the President, being in the chair. The committee appointed by the society to draw up a representation to the General Medical Council in regard to their decision respecting the sale of drugs and poisons presented for consideration the following petition which was read and approved:—

Unto the Honourable the President and Members of the General Council of Medical Education and Registration of the United Kingdom in session assembled. The petition of the Glasgow Southern Medical Society humbly showeth that at the extraordinary meeting of the Glasgow Southern Medical Society held in Glasgow on Dec. 20th, 1900, for the purpose of considering the recent deliverance of your honourable body in the case of Dr. John Martin Thomson of Airdrie, found guilty on the charge "that he, being a registered medical practitioner, habitually employs as assistants for the sale of drugs and poisons persons who are not qualified to act as chemists or pharmaceutical assistants, and thereby causes such persons to commit breaches of the Pharmacy Acts," it was unanimously resolved to lay before your honourable Council some of the points brought out in the discussion and to humbly pray that in your further deliberations on the case of Dr. Thomson you will take them into your favourable consideration. Firstly, your petitioners would remind you that the practice of keeping open shop, surgery, or dispensary in which drugs may be sold has been the custom in Glasgow and the west of Scotland from time immemorial. This right is retained to this day and is distinctly conserved in the Pharmacy Amendment Act of 1868, which expressly states that medical practitioners shall not be affected by the first 15 clauses of the Pharmacy Acts. Your petitioners respectfully submit, therefore, that medical practitioners are by law entitled to practise pharmacy in the same way as members of the Pharmaceutical Society; and, further, that the ancient custom in this part of the kingdom of keeping open shop continued in accordance with the laws is most convenient for the public who have been long educated to its use; and is practically necessary in many localities for the medical practitioner in the discharge of his professional duties. Secondly, with reference to the indictment itself your petitioners would point out that the employment by medical men of unqualified drug assistants for the sale of drugs and poisons except the poisons scheduled in the Pharmacy Acts is in complete accordance with the law. Moreover, the power to sell any drug or poison except scheduled poison is the undoubted right of every citizen. Your petitioners fail, therefore, to see any reasonable cause for the condemnation of the practice of selling drugs and poisons—always excepting scheduled poisons—by trained drug assistants even though unregistered; especially in view of the fact that the sale of them is a common and legal act by persons who make no pretence to special pharmaceutical knowledge. With reference to the sale of scheduled poisons your petitioners would remark that during the 25 years succeeding the passing of the Pharmacy Acts, under the observation of the framers thereof, no distinction was drawn between the owner of the shop and the seller of the poison. Recently, however, it has been made to appear by legal decisions that the assistant is the "actual seller in fact." Since the courts of law decided in this manner medical practitioners have expressly forbidden their unqualified drug assistants to sell scheduled poisons. Your petitioners now contend that as no breach of any law is committed by them they are entitled to respectfully ask you to refrain from any line of action which would seriously hamper the work of medical practitioners in this district. In conclusion your petitioners would respectfully submit that they have no right or desire to enter into the merits of the particular case of Dr. Thomson. But while they recognise their position in this respect they feel it incumbent upon them to protest against an indictment the terms of which have led to many derogatory and invidious remarks regarding general medical practice in Glasgow and the west of Scotland. On behalf of the Glasgow Southern Medical Society, containing over 200 members, your petitioners would express the earnest hope that the prayer of this petition will receive at the hands of your honourable Council due consideration and approval. And your petitioners will ever pray.

Signed in name and on behalf of the Glasgow Southern Medical Society in meeting assembled and the seal of the society affixed thereto at Glasgow this ninth day of May, one thousand nine hundred and one years,

WILLIAM WATSON, M.D., President,
JOHN STEWART, M.D., Vice-President,
ANDREW STEWART TINDAL, M.D., Treasurer,
JOHN FRASER ORR, M.D., Secretary,
ANDREW WAUCHOPE, M.B., C.M., Editorial Secretary,
JOHN COULSON HOWIE, M.A., M.B., Seal-Keeper,
HUGH KELLY, M.D., Convener of Court Medical,
CHAS. E. ROBERTSON, M.D., Governor of Victoria Infirmary, elected by Glasgow Southern Medical Society.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—The annual meeting of this society was held at 20, Hanover-square, W., on May 22nd, Dr. A. J. Harrison, the President, being in the chair.—Dr. C. H. Thompson showed a case of Adenoma Sebaceum in a woman, aged 27 years. The affection dated from infancy and the patient's mental development was poor.—Dr. W. T. Freeman showed a case of Lupus Erythematosus in a young man who had previously come before the society and had greatly improved under escharotic treatment.—Dr. T. D. Savill brought forward a case of Molluscum Fibrosum in a young man, shown to the society six months ago. In the interval the treatment adopted had been painting the tumours with sodium ethylate and some improvement had resulted.—Dr. Graham Little showed a case of Purpura of extensive distribution in a boy, aged 12 years.—Dr. H. Waldo exhibited drawings of a case of Lupus Erythematosus, with multiple and symmetrical lesions. The patient had been under observation for some years after the drawings were made and was brought up by Dr. Waldo to this meeting to illustrate the almost complete disappearance of the lesions as figured in the drawings.—The President exhibited some microscopical specimens of Anthrax Bacilli and spores, kindly furnished from an unpublished case by Dr. J. O. Symes of Clifton, Bristol.—Mr. George Pernet showed a microscopical preparation of Fungus from a case of Tinea Unguinum.—Dr. Waldo then read the Annual Address, choosing as his subject Lupus Erythematosus, and invited discussion of his paper under the following heads. 1. The clinical and pathological features of lupus erythematosus. 2. What was its etiology? 3. Was it related to lupus vulgaris? 4. Experiences of acute severe generalised forms described by Kaposi. 5. Mental phenomena associated with it. 6. Could it be always distinguished clinically?—Dr. Harrison, Dr. J. H. Stowers, Dr. Phillips-Conn, and Mr. Pernet took part in the discussion which followed the paper.—The election of officers for the ensuing session was then proceeded with and resulted as follows:—President: Dr. Harrison. President-elect: Dr. Stowers. Vice-Presidents: Dr. H. A. G. Brooke, Mr. Alfred Cooper, Dr. H. Radcliffe Crocker, Sir George Duffey, Dr. Robert Liveing, and Dr. P. S. Abraham. Treasurer: Dr. William T. Freeman. Honorary secretaries: Dr. Little and Mr. Arthur Shillitoe. Council: Mr. Hope Grant, Mr. Thomas J. Hitchins, Mr. George Pernet, Dr. Phillips-Conn, Dr. H. Leslie Roberts, Mr. George Sequeira, Dr. R. Travers-Smith, Dr. Edward Stainer, Dr. F. Rufenacht Walters, Dr. Wilfred B. Warde, and Mr. Campbell Williams.

A CENTENARIAN.—It is stated that Mrs. Neve of St. Peter Port, Guernsey, who was born in the year in which Louis XVI. of France was guillotined and Napoleon Bonaparte left Corsica, completed her one hundred and eighth year on May 18th. She was born in the house in which she now lives.

Reviews and Notices of Books.

Surgical Experiences in South Africa, 1899-1900. By GEORGE HENRY MAKINS, F.R.C.S. Eng., Surgeon to St. Thomas's Hospital. London: Smith, Elder, and Co. 1901. Pp. 486. Price 16*s*.

THIS book, which is mainly a clinical study of the nature and effects of injuries produced by bullets of small calibre, is a record of Mr. Makins's personal experiences, and as such is a valuable contribution towards that more complete surgical history of the South African war which will no doubt be undertaken by a responsible military medical officer when the whole of the statistics are available. The general trend of the observations goes to show that the employment of bullets of small calibre is all to the advantage of the men wounded, except in so far as the increased possibilities of the range of fire may augment the number of individuals hit; also that such variations as exist between wounds inflicted by bullets of the Martini-Henry and Mauser types respectively depend rather on the form and bulk of the projectile than on any inherent difference in the nature of the injuries. The main peculiarity of the deeper injuries is the frequent strict localisation of the direct damage to an area of no greater width than that crossed by narrow structures of importance such as arteries and nerves. Mr. Makins tells us that of surgical diseases the one most special to the campaign was the veldt sore. His experience is opposed to the hurried removal of the wounded from the field of battle and he feels strongly in favour of stretcher parties for this work. His observations also strongly illustrate the necessity of possessing stationary hospitals of greater mobility and a higher degree of equipment than the service at present possesses. He thinks that the amalgamation of the field hospital and bearer company into one unit is much to be desired, both for economy of working and the more equal distribution of duties to the medical officers engaged. Mr. Makins is an advocate for the substitution of the tortoise tent for the service marquee, for while admitting a warm preference for the appearance of the service pattern he says: "I think it is indubitable that the other is the more useful." In his remarks on the difficulties of operative surgery he alludes to the lack of facilities experienced in getting water for use at operations and to the draughts in the tents carrying the dust from the camp, the latter as one of the commonest troubles. While praising the excellence of the field hospitals Mr. Makins indicates that the stationary hospitals were not, in his opinion, so perfectly conceived or organised, and he remarks that the difficulties experienced in supplying all that was necessary will, he hopes, go far towards securing greater facilities and rights of transport to the Royal Army Medical Corps in the future.

Mr. Makins lays stress on the circumstance that the experience of the present campaign has scarcely justified the early prognostications expressed as to a greater increase in the number and severity of wounds amongst the combatants, the comparative immunity being explained on two grounds—the increased distance which for the most part separated the two bodies of men, and the want of effectiveness of the small-calibre bullet as an instrument of serious mischief. His observations lead him to the conclusion that at mean ranges, both in striking force and as regards the area of the tissue affected, the Lee-Metford is a superior projectile to the Mauser. On the other hand, the ease with which the latter undergoes deformation renders it the less desirable bullet to receive a wound from when not in its normal shape and condition. With reference to entrance and exit wounds he observes that when the range has been short and the velocity high it is often difficult to discriminate between the two apertures, but there is a general tendency of the margins, and even of the area surrounding the exit wound itself, to be somewhat prominent. The wound of exit offers far more variations in appearance than does that of entry. He draws attention to the multiple character of the wounds, to the small "bore" of the tracks, and to the tendency of the injury to be localised to individual structures of importance. The most striking examples of small even tracks were seen in punctures of the elastic and practically homogeneous lung tissue where the wounds were extremely small. He tells us that the tendency of simple wounds to run an aseptic course was very marked, and when suppuration did occur, with apertures of the normal small type, this was always the result of infection from the skin. While not claiming any cauterising action on the tissues by the bullet Mr. Makins inclines to the probability of the heat to which the surface of the bullet is exposed exerting a cleansing action on the projectile, and he remarks that the frequency with which portions of cloth were introduced from the kilt was one of the strongest surgical objections to its retention as a part of active service uniform. He is inclined to think that a general tendency to primary union and the absence of suppuration will always be a feature of wounds from bullets of small calibre, a mechanical factor of great importance existing in the spontaneous collapse and automatic apposition of the walls of the track. The illustrations of ruptured ricochet and grooved bullets are very instructive; it is extraordinary into how many fragments a Lee-Metford or a Mauser bullet may break up if it strikes a hard body while travelling at a high rate of velocity. Fragmentation is shown in some of the skiagrams. On the whole shock was by no means a prominent symptom in the small-bore injuries of soft parts; although initial pain might be slight or absent, all the patients complained of pain of varying severity at the end of an hour after the reception of the wound. In nearly all cases the rush of the bullet determined the initial flow of the blood from the exit wound, and this aperture usually furnished any hæmorrhage of importance. Mr. Makins corroborates Colonel W. F. Stevenson's observations[1] that limbs, the subject of marked local shock, are specially liable to furnish septic discharges. In speaking of primary hæmorrhage Mr. Makins says that external hæmorrhage from the great vessels of the limbs, or even of the neck, proved responsible for a remarkably small proportion of the deaths on the battlefield, but that a considerable number resulted from primary internal hæmorrhage. Secondary hæmorrhage in simple wounds of the soft parts by small calibre bullets was, he says, decidedly rare. The experience of the campaign fully bears out that of the past as to the steady increase of the number of aneurysms from gunshot wounds in direct ratio to diminution in the size of the projectiles employed. Uncomplicated cases of aneurysmal varix, as might be expected, were less common than were those in which the arterio-venous communication was accompanied by the formation of a traumatic sac. Mr. Makins expresses a strong opinion to the effect that in these injuries no operations should be undertaken before a period of from two to three months after the injury unless there is evidence of progressive enlargement. In the chapter on Injuries to the Bones the following are given as the special features of fractures caused by small-calibre bullets: (1) the nature of the exit wound which in a proportion of cases exhibited the so-called "explosive" character; (2) the presence of "local shock"; (3) the striking contrast of clean perforation and extreme comminution in different cases; (4) the occasional occurrence of fractures of a very high degree of longitudinal obliquity;

[1] Wounds in War, p. 83

(5) the rarity of transverse fracture; and (6) the tendency of longitudinal fissuring to stop short of the articular extremities of the bones. Perforations, although common in cancellous bone, were rare in the compact shafts, but Mr. Makins saw several such complete pure perforations. He draws attention to the great effusion into the knee-joint resulting from the vibration transmitted to the limb in the case of fracture of the femoral shaft. All short range lesions of the short bones seen by him were of the perforating variety. Of all the splints he saw in use he thinks the best were wire splints and the Dutch cane folding splints which are duly depicted in this volume. Of fractures of the pelvis he writes: "When uncomplicated they were of little more importance than simple wounds of the soft parts." He never saw a stellate fracture of the ilium. Fractures of the femur formed one of the most serious classes and one of the most fertile sources of mortality in the base hospitals. Mr. Makins has no doubt that Hodgen's splint is the best method of treating fractured thigh in the stationary hospitals. The introduction of small-calibre bullets has robbed joint injuries of much of their importance; during this campaign clean wounds of joints were little more dreaded than wounds of the soft parts alone. The chapter on Injuries to the Head and Neck reveals many points of great interest, and the author feels certain that a long roll of secondary troubles await record in the near future. Injuries implicating the spinal medulla appear to have been proportionately the most fatal of any in the whole body to the wounded who left the field or field hospital alive.

Mr. Makins writes in regard to prognosis that wounds of the chest furnished the most hopeful class of the whole series of trunk or visceral injuries, and he relates the striking fact that the most common and troublesome complication of wounds of the chest, hæmothorax, was usually the result of wound of the chest-wall and not of the lung. Secondary empyemata not uncommonly followed incision of the chest or excision of a rib for draining a hæmothorax.

The pages devoted to the treatment of pulmonary wounds are very practical and are carefully written, and the cases and charts are very instructive. No chapter of military surgery was looked forward to with more eager interest than that dealing with wounds of the abdomen and in none did greater disappointment lie in store. Wounds of the intestinal tract, although they showed themselves capable of spontaneous recovery in a certain proportion of the cases observed, afforded but slight opportunity for surgical skill and the results generally deviated but slightly from those of past experience. Failure was due to the severity of the local injury or to the operations being necessarily undertaken at too late a date. In Mr. Makins's experience the wounds of the abdomen which proved the most dangerous were (1) wounds passing from one flank to the other; (2) antero-posterior wounds in the area of the small intestines; and (3) wounds passing directly backward from the iliac regions. The 70 pages on injuries of the abdomen are well worth reading, but they lead the reader to the conclusion that surgical interference has been a failure and that the preconceived opinion, that laparotomy was in all cases of penetration the proper line of treatment, was certainly erroneous. In concluding his remarks on abdominal injuries, however, Mr. Makins adds that "the impressions are those that were gained as the result of the conditions by which we were bound in South Africa. ..... Under really satisfactory conditions nothing I saw in my South African experience would lead me to recommend any deviation from the ordinary rules of modern surgery."

The volume is well illustrated and Messrs. Smith, Elder, and Co. may be congratulated on the way in which they have published the work.

Congrès International de Médecine Professionnelle et de Déontologie Médicale. Edited by Dr. JULES GLOVER, General Secretary of the Congress. Paris: Masson et Cie. Pp. 697. Price 5 francs (free to Members of the Congress).

THIS is the official report of the International Congress of Medical Deontology and Ethics which was held, under the patronage of the French Government, at the Paris Faculty of Medicine in July, 1900. At the time we published lengthy articles from our Special Correspondent describing this congress, but, of course, it was impossible within the limits of our space to deal fully with all the papers read and the discussions that followed. Even the 697 pages before us do not give the discussions in full, for the congress was divided into several sections and sat during a whole week. Though this was the first time that a congress dealing exclusively with economical and ethical problems as they affect the medical profession had been held no less than 27 nationalities participated and were represented by 444 delegates and members. The Governments of France, Belgium, Portugal, Russia, Ecuador, Japan, Roumania, Austria-Hungary, the United States of America, Italy, Turkey, Norway, Sweden, and Venezuela sent official representatives to attend this congress and to report to their respective Governments upon the nature of the proceedings. This showed on the part of these Governments an enlightened appreciation of the programme and probable influence of the congress. The questions at issue involved the legal, and what is, or should be, the illegal, practice of medicine, and in many other respects dealt with matters that must be partially, and sometimes wholly, settled by legislation. Though a Government only governs the people it represents, if several nations agree upon the necessity of certain reforms or new laws such a concurrence of opinion at least gives greater moral weight to the arguments of those who, in their respective countries, take the initiative in promoting legislation in this direction. Therefore, it is to be regretted that the British Government was not officially represented. It is further and still more regrettable that though Mr. Adolphe Smith, after reading a paper on the Organisation of the Medical Profession in Great Britain, was able to present a list of 35 British medical unions or associations formed for the special purpose of dealing with the questions which the congress had assembled to discuss, the number of British representatives actually present was very small. Fortunately, the publication of this list in the report before us will serve to show that the members of the profession in Great Britain and Ireland have taken action in many directions and that, if they were but feebly represented in Paris, they have not been idle at home.

The proceedings of the congress will serve to demonstrate very forcibly the remarkable similarity of the economical problems which face the members of the medical profession in all countries. It will further show that in all countries the same idea prevails as to the means that should be employed to deal with the grievances that arise therefrom. On all sides the demand has arisen for organisation. The methods of organisation differ somewhat in the various countries, but the object is always the same. In Belgium, France, and the United Kingdom the mode of action—the formation of independent medical unions—is similar. In Germany and Austria the tendency is in favour of medical chambers, which differ from unions, associations, syndicates or guilds in so far as they are official organisations possessing legal powers, and with membership rendered obligatory by law. But in action both strive for the same end—the maintenance of the dignity of the profession and a high code of ethics, the prevention of abuse such as that involved by well-to-do people availing themselves of medical charities or the degradation of the practice of medicine by the smallness of the remuneration paid for contract work. Then the conditions under which the practice of medicine should

be allowed were also lengthily discussed and form part of the programme of all medical unions and medical chambers. As a branch of this latter subject we find the question of the medical man who practises in a foreign country, and on this Dr. J. Schwalbe, editor of the *Deutsche Medicinische Wochenschrift*, read a lengthy paper, reviewing the law of various countries with regard to foreign practitioners. Dr. Schwalbe concluded his paper by urging that protectionism should not interfere with scientific progress, but that, nevertheless, it arises as a natural consequence of the great and vital competition between nations which is becoming more and more keen every day. It is thus, he said, that hunger dominates generosity, just as might rules right. Therefore there is an ever-present reaction. On one side we see the great modern progress of science which serves humanity and intellectually unites the peoples of the world; while, at the same time, we see on the other side the increasing difficulties of material existence which have created the protectionism that economically divides nations one against the other. On this subject Dr. Greenwood, delegate of the Brussels Medical Graduates' Association of England, contributed a paper in which he maintained that academic distinctions and honours should be cosmopolitan, and that the State laws went beyond their province when they insinuated that degrees given by a foreign university were worthless. The proper criterion of a university's degree was, he urged, the opinion of the world.

On the question of hospital abuse a great amount of information was given, not only with regard to the hospitals of Paris and the principal French provincial centres, but also from many other countries. Thus the system of paying hospital patients which prevails, notably in Sweden, was explained and condemned. It was urged that hospital patients should be strictly examined as to the place where they live, the work which they do, the wages that they earn, and even as to the financial position of their near relations, so that the hospitals might be reserved exclusively for the treatment of the poor. But here a difficulty arose from the international character of the congress, as the question assumes a somewhat different aspect when the hospitals, as in England, are maintained by voluntary subscriptions and when, as in most continental countries, they are municipal institutions maintained by public taxation. Mr. E. Montefiore, on behalf of the Charity Organisation Society, contributed a paper on Hospital Abuse in London and advocated the formation of a Central Hospital Board for London. Of course, this centralisation does already exist where the hospitals belong to the municipalities. The question of poor relief taking the form of medical attendance on the poor in their own homes was also lengthily debated. Then there were the cases of accidents and the right of a person to be treated at a hospital when his employer had insured him against such accidents. This led up to the insurance companies, to the medical aid associations, to the friendly societies—in fact, to all the topics which in these columns we have grouped together under the general heading of the Battle of the Clubs. It is impossible here to summarise all that was said on these questions for it is spread over several hundred pages. The reader should consult the volume itself.

The injury that sometimes results from massage that is not performed under medical surveillance was explained and denounced, as also were all forms of special treatment practised by others than fully-qualified medical men. Then prescribing by druggists, the advertising of quack remedies and secret specialities in general newspapers, and many other manœuvres which deprive the medical profession of some of their clients and at the same time endanger public health, were lengthily discussed and energetically condemned. But the most delicate subject was that which comes more precisely under the denomination of "deontology"—namely, the relations of medical men towards each other. This discussion had for its basis a very lengthy and able paper by Dr. Grasset of Montpellier. But it was generally agreed that the duty of the medical practitioner towards his brethren in the profession has nowhere been clearly defined. Where, for instance, does advertisement begin and end? what about medical men who are shareholders in a hydro-medical establishment, a sanatorium, or a drug manufactory? under what conditions can a patient when still ill change his medical adviser? what constitutes the consulting physician? what is the position of the travelling doctor? under what conditions may medical advice be given gratuitously? For all this a code of medical deontology is necessary, but who possesses sufficient authority to draw up such a code? To create such an authority, to confer upon it the necessary moral weight, was the principal purport of the congress. Dr. Grasset concluded by saying: "All we ask of the congress is this: that it will seriously consider one thing, the creation of a superior council of professional medicine charged with fixing and interpreting the general principles of medical deontology (the duties of doctors to each other) to be renewed by election only, on a very wide basis, thus rising above questions of personal interests; having authority over all, by its origin, and from the independence of its members; capable of creation without laws, and without imposing any financial tax; creating no new difficulty or hindrance to the free exercise of our profession; having only a moral authority, which is sufficient for honourable persons who only ask to know what is their duty in order to perform it."

These proposals being widely approved the congress agreed to meet again in 1903 at Brussels and, in the meanwhile, to endeavour to constitute an international committee, not only for the purpose of preparing for the next congress, but also to draw up a draft of a code on medical deontology. From these few words some idea may be gathered of the scope of the report before us. As it is the description of an international congress held in Paris, the greater part of the papers are published in French, but some are in English and German, and there are summaries of the more important conclusions in Italian as well as in English and in German. Altogether this is a valuable volume for all who are interested in the economical position of medical men and who are striving to organise the profession for the defence of its material interests and the maintenance of its dignity and high ethical standard.

Students' Manual of Medical Jurisprudence and Public Health. By G. HAXTON GIFFEN, L.R.C.P. & S. Edin., Senior Demonstrator in Anatomy, Minto House, Chambers-street. Edinburgh: William Bryce. 1901. Pp. 330.

WE are not advocates for condensed text-books, but we believe that the author of this short work is correct in saying that in the first two portions, which are concerned with Forensic Medicine and Toxicology, there is a sufficient amount of information for the pass examinations of the Colleges, although we should hesitate to assent to the suggestion that a candidate could pass an honours examination simply from reading the pages of this volume.

The portion dealing with Forensic Medicine is well arranged and certainly contains a large amount of information in a small space. The use of comparative tables is largely taken advantage of, and these should be especially useful to the student to study immediately before presenting himself for examination, as it enables him to classify his knowledge in such a way that he can enlarge upon the facts so arranged more easily than by hastily reading over whole chapters. Illustrative cases are naturally not quoted in a book of this size. The accounts of the various poisons

are brief but exact, the symptoms, post-mortem appearances, and tests receiving due attention.

In the third portion, that on Public Health, details of practical sanitation and methods of performing tests have not been included, as the book is not intended for either outdoor or laboratory work.

Our Army in South Africa. By R. SCOT SKIRVING, late Consulting Surgeon to the Australian Contingents. Sydney and Melbourne: Angus and Robertson. London: The Australian Book Company. 1901.

THIS little book, or pamphlet, of 43 pages is interesting and worth reading because of its freshness and of its stating the impressions of a civilian colonist who has actively pursued his medical calling in the field. It is mainly made up of the amplified entries of the daily journal which its author kept during the months which he spent at the seat of war in South Africa.

The author's observations extend over only a comparatively short space of time and a somewhat limited field, but they are, if of the "impressionist" type, nevertheless valuable because based on actual knowledge and experience. So far as regards his criticisms on the military aspects of the campaign he speaks with diffidence, knowing full well how a layman is likely to err when he criticises work altogether outside that of his own profession. But with respect to the medical aspects of the campaign he tells us in his preface that he feels on more familiar ground. He trusts that in anything he has said he may not hurt the sensibilities of that most gallant body of men—the Royal Army Medical Corps—and expresses a sincere desire rather to help the officers of that corps to a better position than to find fault and to suggest no remedy.

The subject has an interest at the present time and it is well to see how things struck an able civil surgeon without previous experience in war or any previous special knowledge of military organisation. The author shrewdly remarks that the success which followed Lord Roberts's plan of campaign was partly due to the ignorance of strategy of the larger schemes of a campaign on the part of the Boer leaders, notwithstanding that they are past masters of all that pertains to individual warfare in a difficult country, "which aims at doing the maximum of evil to your enemy with the minimum to yourself." As we took an opportunity of saying at the beginning of the Boer campaign, they lost their great opportunity in not making at an early stage of the war a dash towards the coast. The author has not formed an elevated estimate of the Boer character, and he evidently thinks that had we throughout adopted severe measures hostilities would have been more quickly brought to an end. Speaking of our non-commissioned officers as a body he regards them as the very backbone of the British Army and looks to their much more frequent promotion to the commissioned ranks as a principal means of making the British army an efficient modern fighting force. In this war the special services—the artillery, the engineers, the transport, and the commissariat branches—appeared to him, as a layman, to be particularly well served. He thinks a British officer needs no artificial incentives to the display of personal valour and has evidently some misgivings lest the Victoria Cross should prove an incentive to rashness and a bait, even if of a very noble kind, for self-seeking.

Touching the medical arrangements of the campaign the author has much to say. He thinks that if any grave blame attaches to anyone it should fall upon those who planned the campaign as a whole rather than on the medical heads and he advises the public to pause before they pass a hasty judgment based on Mr. Burdett-Coutts's representations. He saw most of the horrors which Mr. Burdett-Coutts takes as his text and contends that the majority were wholly unavoidable, and as he was at Bloemfontein and was personally acquainted with all the circumstances he is in a position to speak authoritatively about all that he saw and describes. What he has to say about the hospitals at this place and at Sterkstrom is worth reading. Taken as a whole it is strongly corroborative of all that we have maintained. "The fact," he says, "that the Australian medical units possessed their own transport gave them an enormous advantage in this respect over their imperial *confrères*. I am fully convinced that the ambulance service of an army ought to be quite independent of the transport department."

As regards the Royal Army Medical Corps, he believes "that no more honourable, hard-working, and willing set of public servants are to be found in Her Majesty's service. Many of the cruel things I have heard said of these men, who give freely of their best to the State, fill me with indignation. None the less, any outside observer can see plenty of faults both in the professional training of the men and the routine of the department." And to a consideration of these—more especially as to the point of professional training—he briefly addresses himself. Although we do not think that anyone, however able, who is not possessed of some military knowledge and experience is in a position to form any accurate opinion concerning many matters of army hospital organisation, we are nevertheless always glad to hail fresh and original views derived from recent and actual experience. The author does not, by the way, approve of the practice of granting military titles to medical men, but medical officers would probably contend that if only he were in the army he would recognise the advantage that these confer, especially on field service, and that they simply follow and are a corollary of the unification scheme of army medical service organisation.

This little addition to the literature of the war by the late consulting surgeon to the Australian contingents may be taken, as we have said, as well worthy of being read and considered.

LIBRARY TABLE.

The Laws of Scientific Hand Reading. By WILLIAM G. BENHAM. London and New York: G. P. Putnam's Sons. 1901. Pp. 650. Price 18*s*.—This work, which is beautifully illustrated and got up, is evidently written by one who believes in his subject. Palmistry, like so many other quasi-scientific studies, has doubtless a substratum of truth. Thus the carriage of a person's hands upon his entering a room no doubt gives a partial clue to his character. The shape of the hands again gives indications of a particular diathesis and the effect produced upon the shape of the fingers—e.g., clubbing—by various morbid conditions is known to every medical man. But that mounts and lines known under fanciful names give indications of qualities or of future events, or of things likely to lead to these events, is, we will not say impossible, but at any rate not proven. Mr. Benham's views upon physiology are peculiar. Thus on page 106 we find: "As an aid to memory ..... remember the vital life current entering the body through the tips of the fingers. The more pointed the tip the easier this current enters, consequently the more direct the connecting link between the subject and its Creator." So on page 13 Mr. Benham says: "At the moment the child is born and before it has given the first cry, or taken air into the lungs, the fingers extend with a quick, spasmodic jerk. ..... I believe that *at the moment* the fingers of the child extend and become straight and rigid that *life*, the *vital spark* which sets the human machinery in motion, ... is projected into the child through the ends of the rigid fingers and thus becomes the gift of God to His creature."

Ballast. By MYRA SWAN. London: Longmans, Green, and Co. 1901. Pp. 360. Price 6*s*.—We do not like the

pathological novel. As yet in this country the novelist, although he or she discusses syphilis and drink, has not arrived at the treatment in romance of excessive morphicmania, or Sapphism, or vaginismus, all of which diseases will be found in French novels. But, on the whole, pathology is best treated in medical books. "Ballast" is apparently named after the principle with which Bottom's dream was named, for the heroine had no ballast, and hence she took to drinking, beginning with Vin Mariani and proceeding through absinthe to brandy. Her sister Grey, who nursed her with unparalleled devotion, is a very noble character and well drawn. Even she was erratic at times, as when with her lover in a hansom she remarked, "Smoke into my hair, so that when I brush it out the smell will remind me that it is not all a dream." It is rather reminiscent of the gentleman who said, "Pour it over me; I like the smell." But despite this one lapse from dignity we are sincerely glad that Grey eventually found happiness. We must give Miss Swan credit for her portrait of the dipsomaniac.

Modern Natural Theology. By F. J. GANT, F.R.C.S. Eng. London: Elliot Stock. 1901. Pp. 162. Price 2*s.* 6*d.*—Mr. Gant's little book consists of two parts—the first dealing with the testimony of a Supreme First Cause to be found in the workings of nature and the second with Christian evidences or apologetics. His argument is, shortly, that Christian evidences lead to the discovery of a Person who is "One with God and man," that this Person is One also with the Supreme Moral Lawgiver, and therefore One with a Personal Creator who is immanent in nature.

Jerusalem: a Practical Guide to Jerusalem and its Environs. By E. A. REYNOLDS BALL, M.A. London: Adam and Charles Black. 1901. Pp. 238. Price 2*s.* 6*d.*—Jerusalem is, in our opinion, a place which the traveller who does not wish to be disillusioned should avoid. Centuries of pilgrimage have—there is no other word—vulgarised it, and its associations, intensely sacred as they are and ever must be, will be better felt by imagination than if the quarrels between different bodies of Christians, to say nothing of the somewhat numerous fictitious holy places, are seen. But for those who wish to go to Jerusalem for the pleasure of "doing" it we can recommend Mr. Reynolds Ball's little book. It is clearly and simply written and there are some useful maps. We are glad to see by a quotation prefixed to the book that Mr. Reynolds Ball is acquainted with the delightful Evagatorium Fratris Felicis Fabri. Probably, except for the advent of modern tourist agencies and a railway, Jerusalem is much the same now as it was in the fifteenth century.

Atlas und Grundriss der Pathologischen Anatomie. (*Atlas and Elements of Pathological Anatomy.*) Von Obermedizinalrat Professor Dr. O. BOLLINGER. Band II., Zweite, stark vermehrte Auflage. 1901. München: Verlag von J. F. Lehmann. 1901. Pp. 190. Price 12 marks.—This volume of Lehmann's series appears as a second edition. It has been much enlarged and it now contains 72 coloured and 29 black-and-white illustrations, so that it forms a fairly complete atlas of that part of pathological anatomy with which it deals. The text consists of a somewhat brief account of the subject with descriptions of the plates. From these illustrations a student should be able to gather a very fair idea of the gross anatomy of many pathological conditions. It is, perhaps, advisable to mention that the work does not deal in any way with the minute anatomy of the diseases portrayed; that is contained in a special volume of pathological histology. As the coloured plates form the chief part of the work it is only right to mention that they are nearly all most admirably executed. In some cases, as often happens in coloured illustrations, the reds are too red and other colours are too pronounced, but these slight faults do not materially impair the accuracy of the drawings. The general get-up of the work is in accordance with what we have learned to expect from the publishers.

Eye, Ear, Nose, and Throat. By WILLIAM LINCOLN BALLENGER, M.D., and A. G. WIPPERN, M.D. With 165 Engravings and 6 Coloured Plates. London: Henry Kimpton. 1901. Pp. 512. Price 10*s.* net.—The portions of this book which deal with diseases of the ear, nose, and throat are less profusely illustrated than that which is devoted to diseases of the eye. In general the information given is good and there are many practical suggestions which are of distinct value; unfortunately, Dr. Ballenger commits himself to statements and advice which seriously detract from a work otherwise eminently suited for the class of readers for whom it is written, as examples of which we take the following. In the section on diseases of the ear Dr. Ballenger describes most minutely how and when to divide the various layers of the tympanic membrane; in that on the nose "swell bodies" is the term used for erectile bodies; and in that on the larynx Dr. Ballenger seriously states that a patient can adjust his epiglottis so as to enable the examination of the larynx to be easily made. It is the insertion of such careless or erroneous matter that renders the book unsafe; had the author confined himself to accepted views he would have been more successful in his task.

Cours de Minéralogie Biologique. Troisième série. Par J. GAUBE (du Gers). (*Lectures on Biological Mineralogy.* Third series. By J. GAUBE of Gers.) Paris: A. Moline. 1901. Pp. 331. Price 4 francs.—This volume contains a curious discussion upon the mineral composition of the muscles of man, woman, and of some animals. The author maintains that the degree of mineralisation has much to do with conditions of health and he suggests treatment by means of mineral matters that are normal to the human body in accordance with the indications from this point of view. Thus he speaks of the "remineralisation" of man and in the last lectures he discusses the biochemical properties of bacteria and the application of iodobenzyl iodide of magnesium in the treatment of bacterial diseases in general and in the treatment of bronchitic pneumonia in particular. The high rate of iron contained in the human muscle distinguishes it sharply from the muscle of animals. Again, woman's muscles differ from those of man by containing a greater quantity of organic matter, of potassium, and of soda and a smaller quantity of calcium and magnesium. We are not quite clear as to whether he means that the iodobenzyl iodide of magnesium has anything to do with ministering to the mineral needs of man, or that he merely regards it as a drug capable of acting on the whole family of infecting agents—that is, on the pathogenic bacteria. In the last two lectures he states that the action of this new compound has been instrumental in effecting a reduction in the mortality due to pneumonia. The methods of analysis described for the estimation of mineral matter are elaborate and evidently exact.

What to Eat and Drink. By CHARLES HYATT-WOOLF. London: The Gutenberg Press, Limited. 1901. Pp. 152. Price 1*s.*—For the most part this book consists of a series of articles reprinted from *Science Siftings*, of which periodical the author is editor. In many instances the analyses do not convey much information, as, for example, that of tobacco, of Yorkshire relish, or of certain cough specifics. In the analysis given of certain wines the author falls into the fallacy of recording the percentage amount of constituents to the fourth decimal place. We are perfectly certain that there is no method of analysis known which will record exactly the one-ten-thousandth part of a constituent in a hundred parts of the substance. The title of the book, "What to Eat and Drink," can hardly relate to at least two

of the articles described—namely, tobacco and kelpion (a stainless iodine compound).

Arsenic. By J. ALFRED WANKLYN, M.R.C.S. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1901. Pp. 106. Price 2*s.* 6*d.*—Mr. Wanklyn in this book censures the commission of experts appointed by the Manchester Brewers' Central Association, Professor Delépine and a few others, for their conduct in connexion with the recent epidemic of arsenical poisoning by beer. "Since the year 1864 some branches of chemical analysis have decayed in England. The following passage quoted from the report of the commission of experts appointed by the Manchester Brewers' Central Association to investigate the circumstances of the arsenical beer poisoning affords a curious example." The passage referred to relates to the adoption of the Reinsch test. The count which Mr. Wanklyn sets forth against Professor Delépine is that he stated that Marsh's test is inapplicable to beer which had not been previously treated so as to break up the organic matter, and Professor Delépine's knowledge of the test, Mr. Wanklyn ventures to think, was not derived from Marsh's original paper, "but must have come second-hand from some inaccurate text-book." And so the committee of experts are wrong, Professor Delépine is wrong, and everybody else is wrong who disposes of Marsh's test in favour of Reinsch's test. We quite agree with Mr. Wanklyn that there is still some mystery about the nature of the poisoning which we hope will be cleared up by the Royal Commission, and it is also possible, as Mr. Wanklyn believes, that the arsenic existed in a hitherto unknown combination, perhaps an organo-metallic one. The process of fermentation may have evolved a new arsenical compound more poisonous than arsenic itself. The book contains Marsh's original paper which was read at a meeting of the Society of Arts in 1836. In this account there is an obvious error in stating that arseniuretted hydrogen has precisely the same *colour* as arsenical fumes.

JOURNALS AND MAGAZINES.

The Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, F.R.S., D. J. CUNNINGHAM, F.R.S., G. S. HUNTINGDON, M.D., A. MACALISTER, F.R.S., and J. M'KENDRICK, F.R.S. Vol. XXXV., Part 3. April, 1901. London: Charles Griffin and Co., Limited. 8vo. Price 6*s.*—The articles contained in this number of the *Journal of Anatomy and Physiology* are: 1. On the Topographical Anatomy of the Abdominal Viscera in Man, especially the Gastro-intestinal Canal, by Christopher Addison, M.D. Lond., Professor of Anatomy, University College, Sheffield, with three plates and two tables. In this article useful tables show the average positions of the parts in the ileo-colic region of the large intestine and of the solid viscera. 2. Notes on the Hairslope in Man, by Walter Kidd, F.Z.S. The direction of the hair in different parts of the body, as the chest, back, legs, arms, and head, is carefully given. The author of the article considers that in man the direction of the hairslope is in many regions determined largely by external forces and by habits peculiar to man. 3. Abnormal Veins in the Frog, by Thomas W. Shore, M.D. The veins described are an unusual renal portal vein, a vein connecting the renal portal and the pulmonary, mesenteric, splenic, and hæmorrhoidal veins connected to the left lung, and an innominate vein. 4. A Contribution to the Morphology of the Human Urino-genital tract, by C. Berry Hart, F.R.C.P. Edin., with two plates. 5. Contribution to the Pathology of the Bladder and Ureter; Extro-versio Vesicæ and apparent low Implantation of the Ureter End, by D. Berry Hart, M.D., F.R.C.P. Edin., with a plate. 6. Osteology of the Penguins, by R. W. Shufeldt, M.D., C.M.Z.S., with a plate. 7. Notes on the Osteology of Scopus Umbretta and Balæniceps Rex, by R. W. Shufeldt, M.D., C.M.Z.S., with a plate. 8. The Joint in a Fowl's Tongue and its Vocal Function, by W. Ainslie Hollis, M.D. Cantab. Dr. Hollis considers that this structure is the effective agent in producing the "cluck" of the hen. 9. On the Notches and Fissures of the Spleen and their Meaning, by F. G. Parsons, F.R.C.S. Eng., Lecturer on Anatomy at St. Thomas's Hospital. The author of the article considers the notches of the spleen to be mere crumplings of the organ due to its growth and to the pressure of the surrounding viscera. They often correspond to the position of vessels. Lastly, we find the Proceedings of the Anatomical Society of Great Britain and Ireland for February, 1901.

Analytical Records
FROM
THE LANCET LABORATORY.

TABLOID, APOMORPHINE HYDROCHLORIDE AND STRYCHNINE HYDROCHLORIDE.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL-BUILDINGS, LONDON, E.C.)

THIS tabloid is intended for the convenient preparation of a solution of the hydrochlorides of apomorphine and strychnine for hypodermic purposes. Apomorphine is used as an emetic, but its administration is sometimes followed by considerable depression and even collapse. This objectionable effect is avoided by the addition of strychnine hydrochloride, the combination thus providing an emetic free from depressing effect. Since the employment of a fresh solution is essential the tabloid is very useful to that end.

GRAPE LIQUEUR BRANDY (SPANISH).

(WILLIAMS AND HUMBERT, 17, MINCING-LANE, LONDON, E.C.)

We have frequently drawn the attention of the profession to the excellent brandy now being introduced into this country from Spain. Not the least important point about this brandy is that it is pure grape spirit duly matured in wood. It has been said that there can be no question as to whether Spanish brandy is the produce of the juice of the grape, for grape juice is the cheapest liquid in Spain next to water, and thus the failure of the grape crops in the celebrated environment of Cognac through the devastation of the phylloxera has been the opportunity of the wine-grower in Spain. Since the failure of the French vineyards suspicion has for a long time past been cast upon the consignments of brandy called "Cognac" coming into the country, and very naturally so. There can be no doubt, however, of the genuineness of Spanish brandy imported in case. It is a pure grape spirit uncontaminated with spirit from potatoes, maize, or other foreign materials. Hence Spanish brandy when duly matured may be confidently recommended for special medicinal purposes. The sample before us is an excellent type, possessing an aroma and bouquet resembling closely the fine liqueur champagne brandy imported from the Cognac district over 20 years ago. Our analysis gave the following results: absolute alcohol, by weight 42·29 per cent., by volume 49·81 per cent., equal to proof spirit 87·29 per cent.; acidity reckoned as acetic acid, 0·09 per cent.; extractives, 0·32 per cent.; and ethers, 2·8 parts per 10,000. The last result recording the amount of ethers in the spirit is characteristic of a true grape brandy. The value of genuine brandy that is a pure wine distillate resides in its restorative and stimulating properties which are not possessed to anything like the same degree by etherless brandy, and the spirit derived from cereals is invariably free from ethers and certainly from

the peculiar ethers of wine. We are glad to note that the above wine-shippers are introducing this excellent brandy direct in cases from Spain, a proceeding which guarantees it as a genuine product and which avoids any risk of it being tampered with in bottling. By this desirable arrangement the medical man may know for a certainty that the brandy he uses or recommends is genuine grape spirit, which is, moreover, not inferior as regards flavour and bouquet to the Cognac of the "seventies."

BEAMISH'S STOUT.

(GENDALL AND CO., 34, NORFOLK-STREET, LONDON, W.C.)

A plan has been adopted in regard to the bottling of this stout which may be commended. It is bottled by a special process whereby fermentation practically ceases by the time the malt liquor reaches the bottle. The result is a stout without any objectionable excess of carbonic acid gas. The taste is therefore mild and free from the sharp taste of highly carbonated liquors. On pouring out the stout into a tumbler it "creams" rather than effervesces. We understand that the specimens which we examined had been kept for more than 12 months—that is to say, the stout was bottled over a year ago. Our analysis was as follows: malt extractives, 5·36 per cent.; mineral matter, 0·28 per cent.; alcohol, by weight 4·94 per cent., by volume 6·17 per cent., equal to proof spirit 10·81 per cent. The stout was in good, sound condition.

MEAT POWDERS (BEEF, CHICKEN, AND TURTLE).

(H. J. DUNN, 110, BRIGHTON-ROAD, SOUTH CROYDON.)

There should be a great future before these very interesting nutritive preparations. They present the entire qualities and properties of the respective meats from which they are prepared, the process of preservation being effected without altering the chemical or physical condition of the constituents mainly by drying the fresh meats in the cold. The result is a fine dry powder which may be used for preparing a juice containing albumin in the same condition as it occurs in raw fresh meat or the preparation of a really nourishing soup or "tea." The advantages thus gained are very obvious, and especially in the sick room. Thus the rapidly restoring effects of a raw meat juice may be obtained by simply infusing the powder in cold water and straining. On boiling the clear liquid a large part of its albuminous contents coagulates, just as in the case of boiling the white of an egg. We found that in this way the turtle powder yielded nearly 10 per cent. of coagulable albumin, the beef powder 6 per cent., and the chicken powder 7·2 per cent. Nor are the preparations deficient in the soluble and stimulating constituents of meat, these amounting to from 10 per cent. to over 15 per cent. The extraneous fat is carefully removed. We append our analyses of the three preparations. Beef powder: moisture, 7·48 per cent.; ash, 7·78 per cent.; proteids, 67·14 per cent.; and fat, 17·60 per cent. The cold water solution of this powder gave the blood spectrum which shows conclusively that the original condition of the meat is successfully preserved, the process in no way altering the condition of the nutritives, a condition so often essential in the feeding of the sick. Chicken powder: moisture, 7·61 per cent.; mineral matter, 7·37 per cent.; proteids, 77·42 per cent.; and fat, 6·60 per cent. This, like the beef powder, yielded a cold water solution of coagulable albumin, the clear fluid on boiling yielding a bulky albuminous coagulum. Turtle powder: moisture, 3·68 per cent.; ash mineral matter, 13·75 per cent.; proteids, 76·17 per cent.; and fat, 1·40 per cent. The turtle powder yielded nearly 10 per cent. of coagulable albumin, a result which largely explains the nutritive properties of this "fish, flesh, and fowl." The flavours both of the cold extracts and of the soups were preserved to a remarkable degree. We can speak very favourably of these preparations and no proof is needed that they are a great advance upon mere extracts of meat. They present all the nourishing constituents of the meats from which they were obtained and the flavour of the fresh meat is in no way sacrificed. Further, they offer a convenient and effectual means of preparing at a moment's notice either a nourishing raw meat juice or a nutritive soup or "tea." They should prove especially valuable in the sick room, where a juice or a soup may be immediately dispensed by this means—that is to say, raw or cooked meat can be administered, as the case may require. The powders would form also excellent adjuvants to other foods, raising their nutrient value to a powerful and certain degree. We have carefully considered the details of the process by which these meat powders are prepared, and the steps taken to retain the natural flavour of fresh raw meat and to preserve the nutrient strength of the original material unimpaired are as remarkable as they are ingenious.

New Inventions.

"DARK ROOM" FOR OPHTHALMOSCOPY AND LARYNGOSCOPY.

MR F. DAVIDSON of 140, Great Portland-street, W., manufactures a portable "dark room," which will in many cases be very serviceable in ophthalmoscopic and laryngoscopic examinations. In principle it somewhat resembles an ordinary photographic camera, having a bellows body, with the end carrying the lens removed. It consists essentially of two square mahogany frames having each a clear internal aperture of about 15 inches square. When in use these frames are vertical and are connected by the usual bellows arrangement; one of them is fixed to a wooden base and the other slides upon it so that the box or chamber formed by the bellows body may be adjusted to any length varying from eight inches to three feet. For retinoscopy it will usually be opened out to the full extent; for indirect examination a less elongation will be convenient. The surgeon looks in at one end and the patient at the other, a black curtain falling over the shoulders of each so that extraneous light is totally excluded. A lamp with a separate plano-convex condenser having universal motions is placed over the patient's head and in front of the surgeon there is a support on which the ophthalmoscope may be placed. The neutralising lenses for use in retinoscopy are set in a toothed wheel rather less than seven inches in diameter, which the surgeon can rotate with the utmost facility by means of a long brass rod inserted into the axis of a pinion. This wheel or dial carries 26 lenses, varying from + and − 0·5 to + and − 8. When opened for use the "dark room" is placed on a table, on which it stands quite firmly. Its special feature is its portability, for the bellows collapse, the base being hinged folds up against the ends, and the whole packs into a canvas cover so that it can be easily carried in one hand like a portmanteau. The price is 10 guineas complete, or eight guineas without the revolving dial carrying the lenses.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The report of the Medical Sickness and Accident Society states that during the year 1900 the number of members had increased to 2006, and the financial results of the year's working were very satisfactory. The funds increased by £11,379, almost the largest amount in any year's working, and, as no new annuity or life assurance business has been transacted by the society for some years, this shows the sickness business to be in a very healthy condition. The society is strictly confined to registered members of the medical profession, and is conducted on purely mutual principles. In 1900 £8250 were disbursed to the members as sickness benefit, being the largest amount ever paid away for this purpose in one year, but nevertheless, well under the expectation. The funds now amount to £143,553. Continuous sickness pay until the age of 65 is allowed in cases of permanent incapacity, and over a dozen of the members are under this arrangement drawing a permanent provision.

THE LANCET.

LONDON: SATURDAY, JUNE 1, 1901.

The Government and the Medical Profession.

As we briefly announced last week, Dr. HENRY WARD IRVINE of Birmingham has been selected by the Education Department to be one of His Majesty's Inspectors of Schools. The circumstances of this appointment presented features which made it inevitable that attention should be directed to it in Parliament, and the debate which accordingly arose was not directed either against the political probity of the Colonial Secretary or against the personal character of Dr. IRVINE. At least such is our opinion, and certain it is that things far harder than any that were said last week in Parliament concerning Dr. IRVINE'S appointment can now be said concerning the attitude of the Government on the matter. Dr. IRVINE accepted the appointment of medical officer to the Birmingham Consultative Institute at a time when the medical profession in Birmingham considered that the Institute was promising to give to the public professional facilities that it was not in a position to give. The Institute advertised Dr. IRVINE as its medical officer in a manner which was unprofessional. The matter was brought before the General Medical Council at the winter session of last year, and that body, while finding the charge proved against Dr. IRVINE of unprofessional conduct, treated him with all consideration, not removing him from the Register, but giving him a period of six months in which he could think over his position. In the interval Dr. IRVINE, while presumably purging himself of unprofessional conduct, has been given a Government appointment, an appointment which he is no doubt well qualified to hold, but which as a matter of fact hardly ever is held by a medical man. Mr. MCKENNA, M.P., did well to bring the affair to the notice of the House of Commons, and whatever his motive for doing so may have been, it is absurd to say, as certain newspapers devoted to party politics have said, that only a malignant desire to damage Mr. CHAMBERLAIN could have been at the bottom of his action. The importance of the questions involved forms an ample justification of any publicity that may be given to this subject.

Mr. CHAMBERLAIN'S conduct was not in question, but as he took it upon himself to assume that it was, we may say that his interference in the matter did him little credit and reflected badly upon the Government whose attitude we suppose must be gathered from that of the Colonial Minister. Mr. CHAMBERLAIN said that he had never heard of Dr. IRVINE even by name, but that he knew him to be a gentleman of great professional reputation—somewhat irreconcilable statements, made more difficult to dovetail by the fact that Mr. CHAMBERLAIN proceeded to give an account of Dr. IRVINE'S relations with the Birmingham Consultative Institute, with the medical profession of Birmingham, and with the General Medical Council, which though inaccurate was clearly inspired by some knowledge. In Mr. CHAMBERLAIN'S opinion Dr. IRVINE had only infringed the "trade-union rule" of the medical profession. He added that he was not responsible for the appointment which was made by the Lord President of the Council and the Vice-President. The Vice-President of the Council, Sir JOHN GORST, upon whom the responsibility of defending the appointment now devolved, said that Dr. IRVINE was chosen because of his peculiar qualifications for the post by himself and the President of the Council, the Duke of DEVONSHIRE, who had not heard of the charges of unprofessional conduct brought before the General Medical Council against the candidate for Government employment. While it was singular in Mr. CHAMBERLAIN to be able to give a sketch of the professional career of Dr. IRVINE of whom he had never heard, it was careless or cynical of Sir JOHN GORST to plead ignorance of just those antecedents of Dr. IRVINE which were actually contained in official information supplied to the Privy Council on the ground that neither the Duke of Devonshire nor himself had leisure to read the reports of the General Medical Council. The General Medical Council exists for the maintenance of proper relations between the medical profession and the public under the Privy Council. When the General Medical Council saw that it was a duty to the public to caution Dr. IRVINE as to his tenure of a certain post, all the proceedings were duly sent to the Privy Council; and if Dr. IRVINE had desired to appeal against the action of the General Medical Council it is to the Privy Council that his appeal would have been directed. Yet the Lord President of the Privy Council and the Vice-President, while Dr. IRVINE is under the ban of the General Medical Council, select him for a much-coveted Government appointment. This is to administer a public slap in the face to the disciplinary body of the medical profession while engaged in efforts to keep the roll of the profession pure and the standard of medical ethics high.

Our profession is not aggressively political, but it is one that cannot be neglected or flouted by politicians with impunity, for it deals with human interests and social and sanitary conditions that affect greatly the welfare of the nation. Moreover, it has the political influence belonging to men of general and special education, who have chiefly themselves to blame if this influence is not considerable. We do not pretend to say to which side the political bias of the medical profession leans, but it is safe to allege that it is largely conservative in its respect for good precedent, while it has that admixture of progressiveness which comes from contact with the revelations of ever-advancing science. If the medical profession is estranged from the Government in any degree more than it was when they re-entered into office—and we have reason to think that it is so estranged—they have only to thank themselves for the position. They have not acted up to the measure of their strength, as we have on previous occasions considered it right to point out. On the vaccination question they yielded feebly, and they have since broken a promise to bring in legislation

requiring revaccination. They lost the opportunity, offered by the Companies Bill, of altering the law so as to prevent any lay amalgamations from being used for covering unqualified practitioners in medicine. They dealt with the midwives question in a completely unsatisfactory manner. A valuable measure to amend the lunacy laws and a bill to improve the position of medical officers of health have both failed to get into the statute book through want of Government support, and a Medical Acts Amendment Bill has had to be withdrawn. This is not a good record. The Government have shown themselves to be out of touch with right medical feeling; and during the debate upon Dr. IRVINE'S appointment the two members of the Government who spoke emphasised their aloofness in a manner that must have been evident to all our readers. Mr. CHAMBERLAIN stigmatised the endeavours of the Birmingham medical men to maintain a high standard of professional conduct as trade unionism. Sir JOHN GORST said that the Lord President of the Council and the Vice-President had no leisure to read the reports of the proceedings of the General Medical Council. Mr. CHAMBERLAIN might take the trouble, before he again discusses medical ethics, to learn something of the aims and hopes of a self-respecting profession; and he must seek outside the Birmingham Consultative Institution for information. The Duke of DEVONSHIRE might vacate his office in favour of some one who could find time to discharge its duties. And we trust that Sir JOHN GORST, when next he looks among our ranks for an official to fill a place in the Education Department, will not feel compelled to select anyone in disfavour with the General Medical Council.

Influenza as a Factor of Recent Mortality in Chicago.

WE have on several occasions drawn attention to the most instructive bulletins issued from the Chicago Health Department. These publications are issued monthly and the amount of care and study involved in their production must be immense and reflects the greatest credit on the responsible persons, both writers and editors. In the number for March of this year is a leading article on "Influenza as a Factor of Recent Mortality." That the mortality from certain diseases, notably those affecting the respiratory system, rises greatly during an epidemic is a fully-recognised fact, but when we study the actual statistics we are made more fully aware of the ravages inflicted on the human race, directly or indirectly, by influenza. Writing in Professor CLIFFORD ALLBUTT'S "System of Medicine" in 1896 Dr. J. F. GOODHART says: "The permanent home of influenza, if one there be, is not yet absolutely certain. The west of Russia seems on the whole to be its most likely source. ....." It is perfectly true that in 1889 a great pandemic of influenza began, but since that time we are gradually becoming unpleasantly aware that influenza is not a chance visitor, but that it has become one of the most common diseases in this country, frequently assuming epidemic form, and having a marked effect on the mortality returns.

The article to which we have above referred commences with the remarkable statement: "Pneumonia has displaced the 'Great White Plague'—pulmonary consumption—as the principal cause of death in Chicago during the last ten years. In the previous half-century consumption had levied the heaviest toll on human life in this city, but in the decade 1891–1900 there were 9 per cent. more deaths from pneumonia than from consumption." The exact figures are then given, showing that between 1851 and 1890 inclusive, during which period deaths and their causes were recorded with increasing accuracy and fulness, there were 25,719 deaths from consumption and 16,577 from pneumonia; between 1891 and 1900 inclusive there were 22,957 deaths from consumption and 25,228 deaths from pneumonia—2271, or 9 per cent., excess of deaths from pneumonia. Taking a survey of other figures that are given the result shows the extraordinary increase of nearly 46 per cent. in proportion to population and of more than 50 per cent. in the actual number of deaths from pneumonia in the last over the previous decade. Doubtless other causes than influenza contributed towards this great increase. Death-rates of pneumonia increase considerably with advancing age, and some part of the accession in Chicago is unquestionably due to the increasing age of its population; but careful study of the statistics given in the "Bulletin" plainly shows that the augmentation of the pneumonia mortality in Chicago during the last decade is not due solely or chiefly to this cause. The baleful effects of influenza, however, are well shown in the following table:—

—	1889.	1890.	1891.
Total deaths all causes	16,946	21,856	27,754
Rates per 1,000 of population	18·11	19·87	23·92
Total deaths from pneumonia	1170	2073	2808
Rates per 10,000 of population... ...	12·5	18·8	25·0
Total deaths from consumption... ...	1489	1972	2120
Rates per 10,000 of population... ...	15·9	17·9	18·3
Total deaths from bronchitis	816	1189	1495
Rates per 10,000 of population... ...	8·7	10·8	12·9

The total deaths from all causes in 1891, the second "influenza year," are the highest number ever recorded in the history of the city up to date and are nearly one-third greater in proportion to population than in 1889. The consumption death-rate increased 15 per cent., the bronchitis rate one-half, and the pneumonia rate exactly doubled in the two years. Deaths from nephritis and from heart diseases also markedly increased, but not to the same extent as in the later years of the decade. The author of the article to which we are referring makes the interesting comment that the permanent increase of the mortality from consumption did not become marked until the fifth year of the influenza period. We agree with the explanation that is offered of this fact—namely, that pulmonary tuberculosis is a chronic and pneumonia an acute disease. Lesions of the mucous membrane of the nose, throat, and air-passages in the prevailing catarrhal bronchitis of influenza and of the air-cells in pneumonia rendered the soil suitable for the invasion of the tubercle bacillus, while the characteristic prostration of influenza and consequent impaired vital resistance favoured the development and activity of the bacilli which entered the system.

The article then refers to the bacteriology of influenza and rightly insists that its early recognition is the necessary first step to any restriction of its spread. We cannot agree with the author, however, when he states that "the way to fight influenza is through the culture tube and the microscope." The high mortality that may ensue during an epidemic of the disease and the deplorable sequelæ that may never be completely recovered from are accepted facts, but too great a tendency has of late years been evinced to trust to bacteriological investigation rather than to clinical observation; the former is an immense aid to the latter, but must not be suffered to usurp its place. The early diagnosis of influenza is of importance, and still more so is the adoption of means to prevent its spread. In cases which present anomalous symptoms or run an unusual course the recognition of the pathogenic bacillus is of the utmost value, and we believe that for such purposes the laboratory facilities now so generally existing are not sufficiently made use of and many cases thus escape early detection, and the means of preventing the spread of the disease not being used infection of other persons is very likely. When the disease, however, occurs in epidemic form the prevention of its rapid spread is most difficult, and it is only by insistence by practitioners on isolation that its diffusion can be stayed. The quarantine period has not been definitely fixed and patients are apt to mix again with the world at large in pursuit of their ordinary avocations at too early a period and consequently again become centres of infection.

Administration in Irish Lunatic Asylums.

IN a leading article on April 13th last the *Sligo Independent* speaks in no uncertain tone as to its regret that the "high reputation of the Sligo Asylum should have been sullied by the brutal conduct of one of the attendants—a man named GAFFNEY—who savagely attacked a quiet and inoffensive patient and injured him most severely." The conduct of the Asylum Committee in dealing with this individual is almost incredible, and we feel it to be our duty to place the case somewhat circumstantially on record.

An inspector of lunatics held an inquiry on oath, and from the official report as recorded in the *Sligo Independent* the facts of the case show that on April 2nd when the resident assistant medical officer was going his rounds he found the patient in question not walking about as was customary with him but sitting sobbing on a chair. On being questioned the patient said that the attendant had beaten him, and the resulting injuries were found to comprise bruising of the left ear; bruising of the lower lip, the inner surface being cut by the edge of the teeth; a bruise of the right temple; bruising and tenderness over the left lower ribs and the lower part of the abdomen; severe bruising of the left thigh, the skin being removed; and a bruise on the right thigh. Two patients corroborated the patient's statement and an attendant swore that he saw GAFFNEY hit and kick the patient. GAFFNEY admitted having struck the patient, his only reason for the assault being that he was in the way when the ward was being cleaned up. The report goes on to say that the offence was aggravated by the fact that the patient was a harmless, quiet, and most inoffensive man who, apart from his symptomatic restlessness, gave no trouble whatever. The inspector gave it as his opinion that the services of the attendant ought to be dispensed with, on the ground that any person who would wilfully strike a patient, or had so little control over himself as to do so in a fit of temper, was utterly unsuited to be an attendant on that afflicted class of persons whose safety and well-being depend so much on the character and conduct of those who are placed in charge of them. He further urged that if the committee were to condone such an offence, the asylum, instead of being, as it should be, a haven of refuge for the insane, would become a place to be feared and dreaded and the confidence of the public would be shaken in its management, while the ratepayers would become distrustful of the care and treatment which the inmates received. In spite of the cogent utterances of the inspector the committee decided to retain the services of GAFFNEY. One member gave it as his opinion that it was not a bad case, otherwise he would have dismissed him at once; and in any case, he thought that the retention of the attendant might be more effective than his dismissal would be.

This decision appears to have been arrived at by the Leitrim members of the committee, all the Sligo members of the board having left to attend another meeting when the report on GAFFNEY's misconduct came up for discussion. The *Sligo Independent* refers to the probable great surprise of the Sligo members when the facts became known to them and it concludes its article in the following terms: "We would not insult their humanity by even hinting that they would condone an offence against an afflicted and inoffensive man whose mental darkness made him the defenceless victim of an infuriated attendant." This out-spoken condemnatory expression of feeling on the part of the local press cannot fail to find itself re-echoed in the minds of all right-thinking, humane, and unbiased persons. There must be some local or personal reason to account for this frustration of the well-directed efforts of the inspector to maintain the reputation of the asylum. But while the incident is one fortunately not of frequent occurrence, it is one from which a significant moral may be drawn in view of an agitation that has for a number of months been going on in official lunacy circles in Ireland having reference to the management and treatment of chronic cases of insanity. A circular of the Local Government Board for Ireland with respect to the establishment of auxiliary asylums for harmless lunatics, idiots, and imbeciles led the Cork Asylum Committee to propose the utilisation of a disused workhouse at Youghal for this purpose, with such enlargements and adaptations as might be considered necessary and with such internal fittings and medical and other equipments as the circumstances of the case seemed to require, together with an increased cost of maintenance as compared with that expressly mentioned in the Local Government Act. Any differences of opinion between the committee and the lunacy officials at Dublin Castle on these various matters would appear, from correspondence and statements in the *Cork Daily Herald* of Feb. 11th and 23rd and in the *Freeman's Journal* of April 13th, to have been

not absolutely insurmountable, or at all events not hopelessly impossible of authoritative decision one way or another. But when the Cork Asylum Committee decided that their auxiliary asylum for several hundreds of lunatics, idiots, and imbeciles was to be placed under lay resident superintendence we are not at all surprised to find that the lunacy authorities—the lunacy inspectors, in fact—recognised therein the invasion of a principle which they felt it to be their duty to uphold in the true interests of the insane—viz., that the immediate management and care, as well as the treatment, of any considerable number of mentally diseased and disordered beings in an asylum ought to be in the hands of a resident medical superintendent. Are we to take it that by a transference from Cork to Youghal or from a district asylum or workhouse to an auxiliary asylum these unfortunate members of the community leave behind them their brain lesions and their nerve lesions? Is it no longer the case that their bodily organs and functions, their passing humours, eccentricities, restlessnesses, demented helplessnesses, require that close supervision and individual attention which a resident medical officer is able to give, but which cannot possibly be expected to result from the daily visit of a non-resident physician, however experienced and careful? The latter might very properly see to the hospital sick, but who will ask him to make a daily inspection of all the inmates whereby alone he can have an opportunity of observing in their earliest stages new deviations and further progressions in conditions that had become more or less quiescent. It is, for instance, a matter of doubt whether a merely visiting physician, who cannot be expected to know the habits and the characteristics of conduct of the bulk of asylum inmates, would have happened to detect during his visit the unusual condition of the patient to whose cruel treatment we have called attention. We do not wish to lay stress upon an individual case beyond pointing to it as an illustration of the needs as well as the risks that must attend the administration of an asylum containing only harmless patients, if ever we can bring our minds to regard idiots and imbeciles as generally belonging to this class. We are unable to do otherwise than to give our support to the lunacy authorities in Ireland in resisting the introduction of lay superintendence under the circumstances to which we have referred and we are not surprised that the inspectors would rather counsel the building of annexes to the district asylums where the immediate supervision of a responsible resident medical officer would not be denied to hapless lunatics under all the varying conditions to which their diseases render them liable and under the risks which in asylum life are associated with their restlessness and enfeeblement of mind.

We cannot conclude this article without reference to the opinions expressed by the Bishop of Ross, a member of the Cork Asylum Committee and the apostle of lay management in auxiliary asylums. In a letter to the *Cork Daily Herald* of Feb. 11th he admits that there is justification for the residence of medical officers in main or district asylums. He then goes on to speak as follows: "But what purpose will they serve among idiots and imbeciles? How they are to be employed surpasses common comprehension: the problem must be solved by the wisdom of the Lunacy Office. Will those highly skilled medical gentlemen be engaged in the vain task of infusing intellect into those whom God Almighty created idiots, or in the unsavoury task of looking after the beds of those poor creatures many of whom are of uncleanly habits? *It would seem to me that a few strong, vigorous women, neither squeamish nor over-refined, would be more necessary and efficient officers.*" The italics are ours, and we would ask whether this corollary of the "lay superintendent" idea is to be the trend of twentieth-century science and humanity, and whether it is a system of treatment and administration that is likely to meet with the approval of the relatives and friends of the chronic insane or of the public generally.

Annotations.

"Ne quid nimis."

PROTRACTED GESTATION.

THE degree to which the duration of pregnancy can be prolonged has always been a matter of great interest. A very remarkable case of this kind is recorded by Mr. G. H. Hames in THE LANCET of May 25th, p. 1496, in which 320 days had elapsed from the last day of the last period to the day of the child's birth. Estimating the duration of pregnancy from the last day of the last period is always open to the fallacy that the patient may have become pregnant either immediately after the cessation of the last period or just before the period which failed to appear. If, however, we examine the data obtained from observations upon animals in which the date of a single coitus can be accurately determined we find very wide differences in the duration of gestation. Spencer and Tessier from observations upon 1303 cows found that the calves were dropped from the 253rd to the 321st day after coition—a difference of 68 days. Similar observations carried out by St. Cyr upon mares showed a difference of as much as 87 days between the duration of the shortest and the longest pregnancy. In the case of the human subject statistics based upon a single coitus are always untrustworthy, but Dr. Nunnez-Ressié has recorded the case of a girl who gave birth to a child 317 days after she had been raped. Large numbers of cases of prolonged gestation have been recorded both by the old medical writers and in many of the modern works on jurisprudence. Joh. Johnston quotes Paschal as relating an instance of birth after a pregnancy of 23 months, Aventium one after two years, and Mercurialis one after four years' gestation! A case was decided in the Supreme Court of Friesland in 1634 in which a child born 333 days after the death of the husband was pronounced legitimate. As Gould tells us the Parliament of Paris was gallant enough to come to the rescue of a widow and save her reputation by declaring that a child born after a 14 months' gestation was legitimate. Campbell says that Simpson met with cases of pregnancy lasting 319, 332, and 336 days, while Meigs had seen one of 420. Jaffe describes an instance of the prolongation of pregnancy for 365 days in which, as in Mr. Hames's case, the weight and measurements of the child appeared to correspond to the degree of protraction. The civil code of France limits the longest period of the legitimacy of an infant to 300 days, the Scottish law to 300 days, and the Prussian law to 301 days. We may safely assume that the French law in fixing the limit of gestation at 300 days is well within the normal duration of pregnancy, and it is difficult to accept as authentic most of the recorded cases in which the gestation, reckoning

from the last day of the last period, is said to have been prolonged much beyond this period of time. There can be little doubt that many of the older instances of very protracted gestation are to be explained by the retention of the fœtus in cases of extra-uterine gestation. A very interesting medico-legal point has been raised in some of these cases as to when the 300 days is to be counted from. Is it to be reckoned from the exact hour of the marriage, from the hour of the death of the father, or the hour of the separation of the parents? or is it to be counted by legal periods of 24 hours. In a case which came before it the Court of Angers decided that the duration of pregnancy should be reckoned from the moment of the death of the father. The Court of Cassation, however, upset this judgment and laid it down that the word "jour" signified a period of 24 hours, counting from midnight to midnight. In the particular case in question the father died on March 19th, 1866, at 2 A.M., and according to the Court of Cassation the period of 300 days commenced at midnight on the same day. The widow was confined on Jan. 13th, 1867, at 8 A.M., and the 300th day, therefore, expired at midnight of the same day. Another interesting medico-legal question which might arise is whether it would be possible for a woman to delay her delivery until the expiration of the limit of 300 days. In a case of this kind in which the wife wished to give her husband grounds for bringing an action against her the medical man is said by the administration of laudanum to have succeeded in delaying the birth of the child from the 298th to the 301st day.

PETROLEUM INCANDESCENT LIGHTING.

IT would seem almost idle to revert to oil as an illuminant when the great advances that have been made with both gas and electricity are considered, but recently a system of lighting by petroleum has been so successfully inaugurated in some of the London streets as to appear a reproach to existing gas-lighting systems and the electric arc light. The system that we allude to, which is very well illustrated in a recent installation along the whole length of Portland-place, depends upon, first, the automatic vaporisation of petroleum oil, secondly, on the mixture of this oil with air, producing a flame like the Bunsen or atmospheric flame, free from a tendency to deposit soot, and, thirdly, on the impingement of this flame upon a specially made Welsbach mantle of the rare earthy oxides. The light produced excels both the electric arc light and the incandescent gas light in its diffusive power, while its brilliancy may be almost without limit. Its value for public street lighting is at once evident where installations have already been made and the contrast with gas and the electric arc is most favourable, while the cost is, as might be expected, much less so long as oil is as cheap as it now is. Moreover, a feature of the new system is—and we most heartily welcome this feature—that it dispenses with the "grubbing-up" of London streets. The persistent tearing-up of London streets is a serious matter, and an expensive matter, too, which may be placed as a very telling item to the account of both gas and electric lighting. With the new system of petroleum incandescent lighting, which is the invention of Mr. Arthur Kitson, M.E., there is no necessity to dig down to mains in order to establish connexions. Each lamp contains its own modicum of oil, the oil being contained in a strong metal cylinder under a slight pressure of air. The oil is forced into the cylinder by means of a force-pump and the air at the top in a similar way. The pressure of air simply serves to force the oil through an exceedingly small tube to the burner. The metallic tube is no thicker than the wire used for electric lighting, the thickness varying from one-sixteenth of an inch to a quarter of an inch. It is in reality a capillary tube. The tubes may be placed in a wooden moulding in the same way as are electric wires, and one cylinder or reservoir will furnish oil through these tubes for any number of lamps. The trouble of keeping the reservoirs charged and the lamps in going order is no more than that encountered by the postman in clearing letter-boxes. In some cases the renewal of oil or air may be needed daily, but in others only weekly. The oil is forced up to the burner where it is vaporised automatically. At the same time air is mixed with the oil by injection, producing a powerful atmospheric flame. It is said that the Kitson lamp gives more light than the so-called 2000 candle-power electric arc lamp and is more reliable at less than half the cost. The ordinary street lamps give 1000 actual candle power, but lamps are made which give a light from 50 candle power upwards. We are not aware that it is proposed to apply the system to domestic lighting, in which case it would be especially important to ascertain whether the system is satisfactory from a hygienic point of view. We are not informed as to whether the combustion of the oil is perfect or whether the lamp is free from smell. But a system which can light the City of London for less money than is now paid annually for tearing up the streets and repairing the mains, and which, moreover, gives a light of very high standard of diffusive power, is calculated to bid all lighting authorities to pause before increasing the undoubted nuisance and expense of a chronic upheaving of pavements and roadways. We understand that the light is very penetrating during fog and on this score far excels other systems. Some interesting experiments with the most surprising results are being tried in light-houses. The system is, of course, in its infancy, and we have yet to learn how far it can guarantee success in the long run. But that it opens up many interesting possibilities in regard to public lighting is certain. Its application in the country should prove a very great advantage. We have been very much impressed with the installations which we have seen in London, notably in Portland-place and in the Marylebone-road opposite the Great Central Hotel. It would be odd if it should prove that this system of oil lighting should supersede existing systems of electric and gas lighting or even acetylene gas. However, it is often the case that one line of promised advancement, as, for example, electricity, becomes so fascinating that the possibilities of older systems are left unstudied and undeveloped. And there can be no older system of lighting than by means of oil.

MEDICAL ADVICE IN LAY NEWSPAPERS.

THE reasoning powers of the man or woman who is able to pay a medical man's fee and yet prefers to get advice through the columns of a penny newspaper must be curiously small or unexercised. Nothing else except motives of an unwise economy, a penny-wise-pound-foolish method, can explain the prevalent custom of asking advice by writing the description of an illness to a man who has never seen the case and most likely never one like it. As far as the question of expense goes anyone can understand the temptation for a poor man to get for a penny advice couched in apparently the same terms as those in which a medical man would proffer it to him. Yet medical men are notably charitable, and, even apart from their charity, other considerations unfortunately reduce medical fees in many neighbourhoods to a very low figure, so that it must always be possible for the sufferer, however slender his means, to get advice from a qualified medical practitioner. If even the smallest fee is beyond his reach then the patient has hospitals to fall back upon. Yet in many instances he prefers to write a description of the case to the "medical" columns of a newspaper and to receive the instructions of its adviser. The chance of such

advice being good must obviously be extremely slender. To begin with, the kind of man who is willing to give advice in this way upon cases which he has never seen is not likely to possess a high degree of education. Moreover, if he were the best instructed and ablest of medical practitioners his chance of making a correct diagnosis would be smaller than those of an inferior man who had actually seen the case in question. This is an argument which might be expected to prevail upon even the lowest intelligence. Most people would hesitate to send the purchase-money for an article without seeing the article first. Yet they are willing to pay someone, of whose name and position they are ignorant, to say what is the matter with them and how they are to be cured, when the patient and his adviser have had no closer communication than that which the post affords. It is another instance, presumably, of the truth demonstrated over and over again by the success of quacks and patent "cures," that where matters of health are concerned the human being is ready to believe anything he is told. Apparently the one exception to his credulity is that he does not readily believe that men who make the study of disease the main object of their lives are more likely to treat it with success than a confident quack or an ignorant compiler of prescriptions for a lay newspaper. We do not, of course, suppose that there are many people of position in the class that supports newspaper medical advice, but with the boasted educational progress of the day this class should be much smaller than it is. Our attention has been once more directed to the matter by the indignant letter of a correspondent, himself a layman, who inclosed the medical portion of a recent issue of the *Family Herald*. Our correspondent believes that the livelihood of the general practitioner is seriously menaced by the custom of which we have been speaking. Though we deplore the practice as much as he does we do not believe that it does much harm to the medical profession, but rather that the patients themselves are in the long run the chief sufferers, having probably to correct their newspaper "medical advice" by a subsequent acquisition of the genuine article.

THE IMPORTANCE OF ASEPTIC VACCINATION.

DR. WILHELM KARL KUBIN of New York has lately read a paper before the Medical Society of the County of New York on the Importance of Aseptic Vaccination, with Remarks on Vaccination in General. The paper is published in the *Medical Record* of New York of April 6th and is well worth the study of all practitioners. So many practitioners pass through life without seeing any serious result from vaccination that they are apt to think it unnecessary to apply to the operation those precautions of hygiene and asepticism which they insist on in every other surgical procedure. So true is this that in an experience of 50 years or more of the medical officers of the London Small-pox Hospital they did not see from vaccinations or revaccinations further inconvenience than soreness of the arms in some cases. It is to reduce this soreness and other more serious consequences that all good practitioners feel it to be their duty in vaccinating to take pains not to insert anything but pure lymph and to watch any case carefully for a week or two subsequently to vaccination. It is scarcely necessary to say that Dr. Kubin gives the most striking proofs of the efficacy of vaccination and revaccination in protecting from small-pox. We need only instance one fact quoted by him—that in the Franco-German war, in which both armies were fully exposed to small-pox, the German mortality was only 263 men, while the French loss was 23,468, though the French army was at no time more than half the size of the German army, the difference being due to the thoroughness with which vaccination is carried out in Germany. He agrees with Dr. Brouardel in thinking that a community in which every individual has been vaccinated and revaccinated is absolutely protected from an epidemic of small-pox. But the object of Dr. Kubin's paper is to enforce the fact that vaccine lymph, even calf lymph, is by nature septic and contains numerous forms of germ life which, however harmless in most instances, are pathogenic under certain circumstances, to say nothing of manifestly pathogenic germs which may be present exceptionally. He accepts the conclusions of Koch, Copeman, Blaxall, and others that the number of such germs decreases on the addition of glycerine, even to the destruction of streptococcus, the diphtheria bacillus, and the bacilli of tubercle and erysipelas. He insists that unless due precautions are taken untoward results will occasionally follow vaccination and so keep up that absurd prejudice against it which is nowhere more discreditable than in the land of Jenner. He enumerates the principal causes of untoward results incidental to vaccination as follows: (1) impure virus; (2) abnormal or paradoxical course of the cow-pox itself; (3) improper performance of the act of vaccination, as by (*a*) unclean instruments and hands of the operator, (*b*) improperly prepared surface for vaccination, and (*c*) imperfect dressing, which will allow secondary infection; (4) neglect on the part of the vaccinator to exercise supervision and control of the patient until the time of complete healing; and (5) coincident diseases, such as scarlet fever, measles, and the like. His illustration of the possibility of all these accidents is ample and is taken from all sources—from the reports of friends, from literature, and from his own experience. Dr. Kubin prepares the skin and his instruments as carefully for vaccination as any Listerian surgeon would for a major operation. He scarifies so as to have very little bleeding and then rubs in the matter with a spatula—all, of course, being aseptic—and immediately applies his aseptic shield of which he gives the following description. "My shield consists of eight layers of gauze, each three and a quarter inches long and three and a quarter inches in width, having inclosed in the centre a wire net two inches long and one and a half inches wide with a height of one-half inch. Five aseptic strips, each one six inches long and one-half inch wide, accompany every shield, four of the strips to be used in the primary adjustment of the shield and one for reserve to be used when inspection is made. This all reaches the physician in an aseptic condition. Under this device the scab will remain undisturbed by friction of clothing and healing may go on to completion under a single shield. The shield is secured with strips of adhesive plaster. On the first inspection, should the shield be found soiled by discharge, which happens occasionally, a new shield must be substituted." In conclusion Dr. Kubin recommends that a national law should be passed in the United States for enforcing vaccination and revaccination such as exists in Germany.

THE ANNUAL TAX OF THE ONTARIO MEDICAL COUNCIL.

OUR Canadian Correspondent writes:—After the practitioner has secured by examination a licence to practise medicine and surgery in the province of Ontario at a cost of $100 the Medical Council, the governing body of the College of Physicians and Surgeons, demand and exact from him an annual fee of $2.00. There are about 2500 practitioners in this province and some 700 of them have become debters to the Medical Council to the extent of several years' assessments. In order to make these delinquents pay up the official prosecutor of the Council on April 19th addressed to each of them a circular letter informing them that their names had been erased from the Register of the College of Physicians

and Surgeons and that unless they settled with the registrar within 30 days from the date of the letter they would be proceeded against like all other unregistered practitioners, thus practically putting them down in the same category as quacks. About 100 of the 700 immediately paid their assessments along with the arrears, but the remainder sent representatives to the number of nine to wait upon the Provincial Government to protest against the imposition of this annual tax. The delegation was headed by Dr. Sangster of Port Perry who is himself a member of the Medical Council and who some 10 years ago was the leading spirit in a similar onslaught upon this tax which caused no little bitter feeling in the profession at that time. The opponents of the tax claim that they receive no benefit for it at all; that the Medical Council, which is composed of 30 members, are dominated by the college men and the homœopathic body, who have a representation of 13 between them; and that the regular profession is not properly represented on the council. Should the Medical Council persist in their claim and attempt to carry out their threat no doubt times will be warm in the medical profession in this province during the coming summer months in other than a literal sense. On the other hand, the *mandamus* having been issued, those who have responded will expect the Council to go on and to prosecute. There is every likelihood of a test case being submitted to the courts for decision as to the legality of the obnoxious tax.

"SWEETS SPARKLING WITH GLASS."

WE never doubted that the revelations which we published in regard to the presence of glass in certain sweets would be received with incredulity. Further than that, our analyses have been "challenged." Couched in more temperate and courteous terms than characterised some remarks in the general press upon the subject was an article appearing in *Confectionery* of May 13th, 1901, a journal devoted to "the interests of sugar confectioners, chocolate manufacturers, and fruit preservers." In this article our annotation is reproduced in full. The editorial opinion is expressed that it is a case in which, in the interests of the trade, the Confectioners' Association should take action. With this we cordially agree. We have reason to believe that sweets containing glass are still circulating and we therefore repeat our recommendation that the local authorities throughout the country should institute practical inquiries under the Food and Drugs Act and should prevent the sale of such dangerous articles. We can afford to disregard any impugnment of our analysis. No particular skill is required to detect glass in sweets, but it is desirable that examination should be set on foot before the presence of glass is indicated by serious mischief done to the human body. We have not been able to trace the makers of the sweets in question, but we may state that the specimens were sent to us by Dr. Horace Savory of Bedford whose attention was drawn to the sweets as the possible cause of severe abdominal pain in two little children under his care. There is no doubt that the sweets were the origin of the serious symptoms and that the sweets contained sharp splinters of glass. The splinters, moreover, were not buried in the body of the sweet but inlaid on the surface. From information which we have gained we are inclined to the view that the presence of the glass was due to inadvertence. But what a dangerous inadvertence. Probably the glass was substituted for a harmless sparkling material, having got into the sweets much in the same way that arsenic got into beer. We are aware that sparkling glass is sold wholesale for certain purposes and doubtless this was inadvertently used in the sweets which we examined. The sale of such sweets would imperil the health of the purchaser, but there is no reason for believing that there was fraudulent intention. As we have said, it is possible that a great number of these sweets thus unintentionally (as we think) sprinkled with glass are yet exposed for sale. We have pointed out the danger, and it is for the local authorities to trace it to its source and to stamp it out.

PLAGUE IN CAPE COLONY.

A TELEGRAM received at the Colonial Office on May 23rd gives the following statistics of plague at Cape Town for the week ending May 18th. Fresh cases: Europeans, 9; coloured persons, 6; Malays, 2; East Indians, 2; Chinese, 0; natives, 2; total for the week, 21. Corpses found: coloured persons, 3; Malays, 3; East Indians, 1; natives, 1; total, 8. Deaths (including corpses found): Europeans, 2; coloured persons, 9; Malays, 4; East Indians, 1; Chinese, 1; natives, 1; total 17 (*sic*). The total cases and deaths up to May 18th are as follows: Europeans, 164 cases and 52 deaths; other nationalities (Asiatics and African natives), 475 cases and 240 deaths. Total up to May 18th 639 cases and 292 deaths. A private in the Field Artillery, Gibraltar lines, Green Point, has developed plague, bringing up to 46 the total cases among persons under naval and military control. A private in the Army Ordnance Corps died from plague at Port Elizabeth on May 20th. A European in charge of a coffee-stall at Green Point camp has developed plague. Two privates in the 1st Battalion Loyal North Lancashire Regiment at Mafeking have now been officially pronounced to have plague; these men with 20 others arrived at Mafeking from Cape Town on April 19th. The area of infection remains unaltered.

MIND-WANDERING.

IN his presidential address to the Neurological Society Dr. W. Julius Mickle[1] dealt with the subject of mental wandering—a condition which he defined as allied to certain dream-states and delirious or sub-delirious processes. This condition lent itself to both subjective and objective study and observation, and its study threw light on certain nervous and mental states occurring in the borderland between the normal and the abnormal. The patient selected for special study in the present instance was a medical man who, as the result of typhoid fever, developed an abnormal mental condition. The first slight deviation from health occurred on the fifteenth night after exposure to infection, sleep being light and disturbed. The next morning a light "swimming" sensation was felt in the head. In spite of this he continued with his usual work with the result that his malaise and weakness increased, he looked grey and tallowy, had a febrile temperature, and had to take to bed. On the fifth day there were high temperature, headache, mental confusion, and incipient delirium. In comparison with the fever the degree of toxæmia, as measured by prostration, perspiration, insomnia, and delirium, was disproportionately severe. In the confusion and swirl of ideas which characterised this stage the mind was like the "dove from the ark unable to find a resting-place," and seemed in danger of sinking in the "trackless waste of delirium." The wavering Ego was even now partially and fluctuatingly confusing the self with others and with the surroundings. "In confusion and seething turmoil," says Dr. Mickle, "the Ego-group inclined to break up into constituent parts, to confound some of these with, or attach them to, other persons, or to group the constituents afresh." This partial dissociation of the Ego is the result of the action of morbid processes on the "association-centres" of the brain and may be brought about by toxæmia, fever, inanition, and cerebral exhaustion by insomnia or over-exertion. The

[1] Brain, Spring, 1901.

patient would at times confuse himself with his interlocutor, or he would feel as if he was partially changed into another—or into several others—a condition analogous to certain dream-states—and occasionally the original self would be re-integrated and would recall itself with some degree of lucidity. "At one time the delirant seemed to be mainly substituted by three persons of different ages, all suffering like him from typhoid fever." At this point of time the patient had refused to take beef-tea on purely medical grounds which he expressed and of which he could afterwards retain some recollection. When, however, he was expostulated with by his nurse and the reason of his refusal demanded his final reply, after some colloquy, would be, "I'm sure it is not good for them"—for *them*, be it noted. So that he was now, for the time being, assisting in the treatment of his changed and alienated self. During another stage of the illness there appeared a change of the self of another sort, a reduction towards the mental status and disposition of childhood. Dr. Mickle proceeds to point out the delicate complexity and heterogeneity of the Ego. Even in health we discover on careful scrutiny and analysis that manifold and multitudinous elements constitute the Ego, and many of these are loosely united, transient, and readily replaced by others. A process of decay and of renewal, of loss and of acquisition, is continually going on. In the present case certain sensory troubles also supervened, such as paræsthesia of the mouth and teeth, a feeling of general "pulpiness" of the body, and perverted sensibilities of sight. Illusions of sight—e.g., landscapes and shipping, panoramic views of plants, paths, and cows—also appeared and vanished in association with some degree of vertiginous feeling. Dr. Mickle seeks to correlate some of these phenomena with rhythmic vaso-motor disturbances in the brain. Temporary bronchitis and treatment of it with inhalations formed the starting point of delusions as to being alternately anæsthetised and suffocated and to vigorous expostulation and denunciation by the patient. He also had phantasmagorial illusions of riding in a coach while actually seated in a chair, of watching a gigantic stringed instrument which he thought was allegorical of human lives, and at one moment even imagined he was a general paralytic. He slowly improved and in the course of about five months was on the high road to recovery.

A NEW EXPONENT OF "EDDYISM."

THE Earl of Dunmore has contributed three articles to a daily newspaper, in order that "Christian Science," of which he is apparently an enthusiastic devotee, may be brought home to the multitudinous readers of the halfpenny press. His lordship's summary of the religious doctrines of Mrs. Eddy has little concern for medical readers, save to reveal what they know already—viz., the incomparable credulity of that lady's followers. We learn that she was once a "gentle, pious, unassuming Christian woman," and that now she stands out "far in advance of the common frontage of human mentality"—a very gratifying position for an unassuming woman to occupy; and we are also informed that "(1) there is one Mind (God) and that Mind governs all; (2) that man being God's spiritual Idea is the reflection of this Divine Father." The unravelling and discussing of cryptic phrases such as these we must leave to others, especially recommending the matter to the attention of that large public which enters into journalistic competition of acrostic-guessing. But when we come to an assertion the meaning of which is conveyed by the phraseology we feel bold to make a remark or two. "It was authoritatively stated," says Lord Dunmore, "at the World's Congress of Religions, as long ago as 1894, that more than 1,000,000 cases of disease had been healed by Christian Science up to that date, and that many of these cases had been previously pronounced incurable by the doctors." We should like to know who, in Lord Dunmore's opinion, could be in a position to make such a statement "authoritatively"; and we should like to meet a few of "the doctors" who had given up as incurable the cases which quacks claim to have cured. The public ought to hear what actually was the nature of the alleged disease and the evidence of medical men as to the genuine cure of the condition by Christian Scientists. In particular, we ought to have the names of these "doctors." Unassuming Mrs. Eddy's name is blazoned forth in print, why should not the names of the medical men be also published? Beyond assertions of the kind quoted we have no doubt that Lord Dunmore has given a compendious summary of Mrs. Eddy's teaching, but it is our regret that when we begin to understand what he is driving at we commence at the same time to see that, judged by ordinary canons of reason and experience, this distinguished traveller and excellent nobleman is talking sheer nonsense. Perhaps we ought not to judge by ordinary canons such a sentence as this, which, we believe, sums up the Eddy position with relation to disease: "Metaphysical treatment through the power of Divine Truth is able to heal mortal mind of the illusion of sickness; and when the mind is relieved of its illusion there is no sickness left to disappear." Our "mortal mind" only enables us faintly to picture a cholera microbe or a bacillus of tuberculous tendencies taking a defensive and wholly unsympathetic attitude under metaphysical treatment and refusing to disappear from possibly congenial surroundings. We might even anticipate that the illusion of death might follow the illusion of sickness with unusual frequency among Lord Dunmore's friends, had we full confidence in the zeal of the convert when confronted with martyrdom, and had we not some faith in the sense of Englishmen and Englishwomen prevailing in the long run. When the Christian Scientist is seriously ill, the Christian Scientist's relatives, whether of the cult themselves or not, feel themselves loaded with a somewhat serious responsibility. This responsibility they usually proceed to transfer to a medical man, though possibly not until delay has considerably increased the difficulties of treatment.

INFANT MORTALITY AND THE OCCUPATION OF MARRIED WOMEN.

IT is frequently asserted that the high death-rate of infants in large towns is in great part due to general neglect and also to want of breast milk in consequence of the mothers having employment as factory workers and therefore being away from home all day. In a recently published pamphlet,[1] however, Mrs. Florence J. Greenwood, sanitary inspector, Sheffield, shows that a good deal may be said on the other side and that the connexion between infantile mortality and the employment of married women as factory workers is by no means so immediate as has been often assumed. For instance, it is generally agreed that the employment of married women in factory towns is either diminishing or, at least, not increasing, but the infantile death-rate, nevertheless, tends decidedly to rise. The Registrar-General's report for 1899 shows that in 27 out of the 33 great towns it has increased during the past 10 years, and in six towns where it has decreased the reduction is not great, whilst in Burnley, a typical manufacturing town, during 1899 there were 269 deaths under one year of age per 1000 births, or an excess of 61 per 1000 over the average of the preceding 10 years. Again, a similar inference is to be drawn from the statistics of Chesterfield, a town of about 25,000 people, situated in the centre of a mining district in

[1] John Bale, Sons, and Danielsson, 33-39, Great Titchfield-street, W.

Derbyshire, where there is little or no employment for married women. In 1898 the infantile death-rate for England and Wales was 161 per 1000 births; in Sheffield, with a population of over 360,000 and a small population of married women employed as trade workers, it was 195 per 1000; in Chesterfield, a country town, it was 238 per 1000. Mrs. Greenwood supports the view that these high infant mortalities are due principally to improper feeding, insufficient clothing, and general domestic mismanagement. She believes that more good can be done by house-to-house visitation and advising parents than by any legislation tending to prevent women from working in factories.

ABDOMINAL PAIN IN TYPHOID FEVER.

THOUGH abdominal tenderness is one of the recognised symptoms of typhoid fever the question of spontaneous abdominal pain apart from complications is little considered in the text-books. The introduction of the operative treatment of perforation has rendered this question important, for pain is the most constant symptom of perforation. Professor Osler, in a valuable paper on the study of the symptoms of perforation with view to early operation,[1] points out that severe abdominal pain in typhoid fever may be associated with pleurisy, cholecystitis, a distended bladder, or a loaded rectum, or may follow the administration of an enema. In the *New York Medical Journal* of May 4th Mr. Thomas McCrae, assistant resident physician of the Johns Hopkins Hospital, has published an important paper on abdominal pain in typhoid fever based on observations made in Professor Osler's clinic. Typhoid fever is becoming more and more a disease which is treated in hospitals. The recognition and estimation of serious abdominal symptoms must often depend on the resident medical officer. The question of the cause of pain may confront him suddenly and other symptoms may be contradictory or deceptive. The diagnosis of perforation may be most difficult, but decision is imperative for early operation is all-important. Mr. McCrae has made a careful study of the symptom of abdominal pain in a series of 500 cases of typhoid fever. In 206, or 41 per cent., there was neither pain nor tenderness; in 72, or 14 per cent., there was tenderness without pain; and in 222, or 61 per cent., pain was present at some period. Out of these last cases pain was present only at the onset in 61, which leaves 161, or 32 per cent. in which pain was present during the course of the disease. In the first group (in which there was no pain or tenderness) it is of interest that conditions which sometimes cause pain—tympanites, diarrhœa, and hæmorrhage—were found. These cases were mild as a rule; eight were fatal. Pain present at the onset of typhoid fever may lead to erroneous diagnosis: in cases associated with diarrhœa in which high fever is absent enteritis may be diagnosed; if the abdominal symptoms are more severe and there are localised tenderness, rigidity, &c., appendicitis or peritonitis may be diagnosed. In four cases this error was made. Abdominal pain during the course of the disease may be due to: 1. Conditions apart from any special lesions of the disease—hysteria, pleurisy, pneumonia, distended bladder, labour, and menstruation. In the series pain was due to hysteria in four cases, to pleurisy in two, to pneumonia in one, to distended bladder in four, and to menstruation in one. 2. The pain may be due to disturbances of the gastro-intestinal tract apart from complications. In two cases the pain was due to the taking of solid food which was smuggled into the hospital by friends, in three it was associated with severe and protracted vomiting, in 10 it was apparently due to constipation (fæcal impaction in three), in two it was associated with the administration of an enema, and in 16 it was associated with diarrhœa. 3. The pain may be due to abdominal conditions apart from the specific intestinal lesions. In two cases it was due to appendicitis (apparently not typhoid). In one case it was due to peritonitis; the patient had recently undergone operation for pyosalpinx. In three intestinal obstruction—after operation for perforation in two and for hepatic abscess in one—was the cause. In four cholecystitis and in one hepatic abscess was the cause. In 10 the pain was associated with a tender spleen. In four phlebitis of the iliac vein was the cause of severe abdominal pain. 4. The pain was associated with hæmorrhage in 14 out of a total of 36 cases of this complication. In some cases it came on in paroxysms, in others it was more continuous. 5. Pain from perforation occurred in 13 cases; in all it was severe. These cases may be divided into two groups—those with sudden onset, of which there were 10, and those in which pain preceded the perforation for some days. In four the pain was accompanied by vomiting. In three the pain at the onset was referred to the penis. This sudden onset of pain is very suggestive of perforation. The nurses should be instructed to send immediately for the medical officer when it occurs. It is important to see the patient at once, for the severity of the pain may pass off in a few minutes and the patient be comparatively comfortable. The most careful examination should be made, noting every symptom as advised by Professor Osler.[2] An endeavour should be made to exclude all other possible causes of pain. The pain did not remain constantly severe in any instance but was paroxysmal, the patient in the intervals being almost free from pain. Should the patient be then seen—for example, by a consultant—a very different picture may be presented to that found a short time previously. In such cases, perhaps, a couple of hours should be spent in frequent observation of the case. Only thus may it be possible to estimate the character of the pain. In one case recurring paroxysms of severe pain with increased respiratory rate were the only symptoms of perforation during eight hours; then tenderness and rigidity suddenly supervened. Next to cases of perforation in which there is no pain those in which there was no sudden onset and possibly no increase of the pain previously present are the most difficult to recognise. There were three such cases in which pain was present for five, nine, and 10 days before operation respectively. In one a sudden severe exacerbation suggested perforation, in the second vomiting suggested the general peritonitis which was found on operation, and in the third the perforation was not recognised. 6. Pain without discoverable cause was present in 70 cases—a surprisingly large number. It was usually not severe and was of short duration. The majority of these cases showed no special features, but one group was important because perforation was simulated; leucocytosis and abdominal symptoms—tenderness, rigidity, &c.—were present. Possibly some undiscovered inflammatory complication was the cause of these symptoms. Leucocytosis in typhoid perforation has recently been discussed in an annotation which may be read in connexion with the present one.[3]

[1] THE LANCET, Feb. 9th, 1901, p. 366.

HONOURS TO EDOARDO PORRO.

AN Italian contributor, under date Milan, May 24th, writes:—"The Senator, Dr. Edoardo Porro, professor of gynæcology in the Regia Scuola Ostetricia of Milan, has just received gratifying testimony of the admiration and affection entertained towards him by his colleagues and fellow-workers in his own branch of the profession. Twenty-five years have elapsed since he devised and performed the operation to which he had given his name, but his clinical

[2] Loc. cit.
[3] THE LANCET, May 18th, 1901, p. 1417.

and consultant activity during the interval has been scarcely less salutary to the lay world and honourable to the medical cause. Interpreting a sentiment not confined to his native Lombardy but universal throughout the Italian kingdom, a strong committee, of which his colleagues Dr. Mangiagalli and Dr. Decio were the leaders, raised funds by subscription for a massive gold medal to be struck in his honour, the artistic elaboration of which was entrusted to the well-known masters in that *métier*, Signor Cappuccio, Signor Boninsegna, and Signor Johnson of Milan. The result is in all respects worthy of Edoardo Porro. On the obverse a three-quarters profile in strong relief renders vividly and happily the characteristic North-Italian head, with the masculine yet refined features aglow with intelligence, decision, urbanity, and benevolence. Encircling the head, in capital letters, are his name and place of origin: EDVARDUS PORRUS MEDIOLANSIS. On the reverse, reposing on a floral wreath, up which the Serpent of Epidaurus has worked its way, rests an oblong tablet inscribed as follows: SECTIO CAESAREA . SALUBRIOR INSTITUTA . AN . MDCCCLXXVI . COLLEGÆ ET AUDITORES AN . MDCCCCI. On the same day the illustrious gynæcologist was presented with another testimonial, equally significant, an address inscribed on a 'targa artistica' (artistic shield) and signed by office-bearers of the Società Italiana delle Levatrici (Society of Italian Midwives), of which he is president. No one was less prepared for this touching demonstration than Professor Porro himself, and the scene was one never to be forgotten by those who waited on him at his residence, when amid words of reciprocal affection and gratitude the testimonials, as a *κτῆμα εἰς ἀεί*, passed to their worthy destination."

UNCERTIFIED DEATHS IN THE HEBRIDES.

WHEN the time comes round for procuring any adequate attention to the treatment of the sick poor in remote districts, the claim of such persons in the Hebrides for early consideration will be very strong. The tenth annual report of Dr. Ogilvie Grant, medical officer of health of the county of Inverness, is one of great interest. It gives much information of the difficulties in the way of a health officer who has to make journeys to the remote islands in the west, more difficult to accomplish and requiring more time than journeys to Paris or Berlin. It contains tables for the past 10 years of deaths and death-rates, of longevity, of density of population, of infantile mortality, of causes of death, of uncertified deaths, of births and birth-rates, of old age, of meteorology, and of notified diseases. Dr. Grant dwells with much satisfaction on the increased efforts to grapple in all its forms with tuberculosis which has been a deadly disease in these districts in Scotland. But he dwells with very opposite feelings and with much reiteration on the fact that in the country an enormous number of persons still die without any medical assistance. In the last year under the head of "uncertified deaths" he says that it is deplorable that in the county of Inverness nearly 400 persons died and were buried without any knowledge about, or investigation of, the cause of death, as far as the medical profession was concerned. Thus, of 80 deaths registered in the parish of Duirinish 51 were uncertified, of 47 deaths in Kilmuir 33 were uncertified. In the parish of Portree, of 55 deaths registered 27 were uncertified. In the parish of Sleat, of 27 deaths registered only four were certified. In Harris, of 111 deaths registered 57 were uncertified. In North Uist, of 85 deaths registered 26 were uncertified, and in South Uist of 85 deaths registered 57 were uncertified. Taking a period of 10 years into view in the Island of Skye alone there were no less than 1426 uncertified deaths, and in South Uist district there were 770. During the same period in 10 years in this single county "nearly 4000 persons have gone to their graves unalleviated by medical care." We shall not moralise on so pitiful a fact but commend it to the Local Government Board for Scotland. The medical profession cannot be blamed for it. Nor can the medical journals. The General Medical Council, too, has urged the matter in various ways on the attention of the Government. Even the war does not excuse the Government for such indifference as is displayed in allowing the continuance of such a scandal as 4000 deaths in one county in 10 years with no provision for medical attendance. In many of these cases, doubtless, life itself would have been saved by proper medical supervision and in most of them unspeakable suffering would have been averted or reduced to a minimum. A remarkable instance of an isolated population deprived of medical aid is reported from the three islands of Arran, situated off the west coast of Ireland, 30 miles from Galway. Communication with the mainland is limited to a steamer from Galway three times a week, if the weather permits, and an occasional small sailing vessel. Typhus fever is of not infrequent occurrence in the island and Mr. T. Kean, the dispensary medical officer, fell a victim. During his illness, which unfortunately proved fatal, he is said to have been without medical attendance for a week and the Galway Board of Guardians, as the local authority, is much blamed for permitting this deplorable state of matters.

THE PATHOLOGICAL SOCIETY OF LONDON.

THE council of the Pathological Society of London having proposed certain alterations in the mode of conducting the business of the society, these proposals were submitted to the annual meeting held on May 21st and were adopted. The work of the society will now be carried on in four sections, and certain vice-presidents have been elected to act as chairmen in these sections, and secretaries have likewise been elected who will each arrange the proceedings of his own section, and members of the council have also been deputed to act as committees of the several sections. Section A will be concerned with Pathological Anatomy and Histology: its chairman will be Dr. J. F. Payne, and the secretary will be Dr. H. Morley Fletcher; the committee will consist of Dr. J. Galloway, Dr. C. D. Green, Dr. H. D. Rolleston, Dr. N. Dalton, Dr. G. F. Still, Mr. T. W. P. Lawrence, and Mr. D'Arcy Power. Section B will deal with Bacteriology: the chairman will be Dr. E. Klein, F.R.S., and the secretary Mr. A. G. R. Foulerton; whilst the committee will include Dr. F. W. Andrewes, Dr. W. Bulloch, Dr. Allan Macfadyen, Professor John McFadyean Mr. H. G. Plimmer, and Mr. W. C. C. Pakes. Section C will study Experimental Pathology: the chairman will be Dr. F. W. Pavy, F.R.S., and the secretary Dr. T. Grigor Brodie; whilst the committee will be formed by Dr. W. S. Lazarus-Barlow, Mr. Walter Edmunds, Professor E. H. Starling, F.R.S., and Mr. C. A. Ballance. Finally, Section D will be concerned with Chemical Pathology: the chairman will be Professor W. D. Halliburton and the secretary Dr. A. E. Garrod; and the committee will consist of Mr. F. G. Hopkins, Dr. Vaughan Harley, and Dr. S. G. Hédin. It will be interesting to see how this new scheme will work. We believe it will be found greatly to increase the value of the society and to accentuate the advance of pathological knowledge. The large number of physicians and surgeons who have done special work in the various branches of pathology as above indicated, and who have been appointed in some capacity to the different sections, will doubtless take an increased interest in the work of the society generally, and a friendly rivalry will probably exist between the sections to forward as far as possible original research and to encourage those who have special opportunities of studying and observing morbid

specimens and pathological processes to bring the result of their observations before one or other of the sections, so that the members who frequent that section will be able to criticise and to suggest much to the advantage of pathological work in general.

CHELSEA CLINICAL SOCIETY.

THE fourth annual dinner of the Chelsea Clinical Society was held at the Criterion Restaurant, Piccadilly-circus, W., on May 23rd. There was a large attendance of members and guests under the chairmanship of Dr. William Ewart, the retiring president of the society. After the health of "The King" had been duly honoured Dr. Ewart proposed the toast of "The Chelsea Clinical Society" and dwelt upon the great advantages likely to accrue to that society from its association with the Jenner Institute of Preventive Medicine. The latter institution has generously offered to the society the use of its rooms for meeting purposes and the meetings of the society next session will probably be held at the Jenner Institute. Kindred societies were replied for by Dr. Archibald Garrod and Dr. Dundas Grant and the visitors by the Rev. H. J. Kitcat. Mr. C. A. Morris, the president-elect of the society, Mr. Foster Palmer, and other members spoke during the evening, the speeches being pleasantly interspersed with music.

BLUE URINE.

THE case recorded in another column of a patient who passed blue urine is a good illustration of a rare phenomenon, and Mr. John Good deserves thanks for having brought it to the notice of the profession. Methylene blue is now fairly frequently prescribed in neuralgia and kindred affections. The urine of patients taking this drug becomes coloured blue, but this cause of the colour of the urine cannot apply to Mr. Good's case; he made careful inquiries and satisfied himself that his patient had not been taking methylene blue. We believe the etiology suggested by Mr. Good to be the correct one—namely, that indol was produced from the products of proteid decomposition. Indol by the putrefactive action of the bacillus coli forms indican, which on oxidation causes the formation of indigo. For these chemical changes to occur before the urine is passed is most rare, but this phenomenon has been noted in cholera and in typhus fever. The blue colour is more frequently seen when the urine has been exposed to the air and is becoming decomposed. Indican occurs in the urine more particularly in cases of constipation and in cases of long-continued intestinal obstruction. Professor J. Rose Bradford, writing in Professor T. Clifford Allbutt's "System of Medicine," states that it is also found in cases of putrid inflammation, such as putrid empyema and gangrenous pneumonia, also in tuberculous peritonitis, gastric ulcer, cancer, and other diseases. Should the indican become oxidised in sufficient quantity, the urine may then become blue from the formation of indigo. The latter substance is occasionally found in urinary sediments and calculi.

IN connexion with the establishment by the Metropolitan Asylums Board at Rochester House, Little Ealing, of a training-school for 150 imbecile children of a more hopeful type than the mass of those congregated at Darenth, Dr. G. E. Shuttleworth (now examiner of defective children to the London School Board and formerly medical superintendent of the Royal Albert Asylum, Lancaster) has been appointed medical expert, and Dr. R. Halstead Dixon visiting medical attendant.

THE *London Gazette* of May 28th officially announces the following appointments to the Royal Victorian Order:—To be a Knight Commander: Mr. Frederick Treves, C.B. To be a Commander: Mr. Alfred Downing Fripp, C.B., M.V.O. To be a Member of the Fourth Class: Dr. William Augustine Ellison.

MR. JAMES GRAHAM, M.A., M.D. Edin., M.B. Sydney, the Mayor of Sydney, whose knighthood was recently announced, was knighted by the Duke of Cornwall and York on May 29th at a *levée* held at Government House, Sydney.

THE Jubilee Festival (1850–1901) Dinner of the Islington Medical Society will be held at the Café Royal, Regent-street, London, W., on Wednesday, June 5th. The chair will be taken by Dr. James Grey Glover, J.P.

MR. J. BLAND-SUTTON will be a candidate for a seat on the Council of the Royal College of Surgeons of England at the next election.

THE REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR 1899.

CONCLUDING NOTICE.[1]

THIS question of the vastly increased susceptibility of the European soldier to be attacked by typhoid fever during the first two years of his service in India, and notably during the first year, has been so frequently alluded to by us that there is no need to dwell upon it now. The fact has been repeated for so many years in Indian statistics of the disease that it may be taken as established and it has a most important bearing upon our military occupation and rule of India. The European military population of that country may be said to constitute a great etiological and pathological experiment. The white population of India is almost exclusively made up of individuals of that time of life which may be termed the enteric fever age in all countries, and as far as the army of India is concerned its numerical strength is maintained under a short-service system by being annually replenished with fresh arrivals of young soldiers from the United Kingdom who, during their earlier years of Indian service and whilst they are undergoing a process of seasoning, acclimatisation, or of "survival of the fittest"—call it what we will—form a material highly susceptible to typhoid fever. The comparative freedom of the British garrison at Aden from this disease falls in with the foregoing observations, for the troops garrisoning Aden are usually composed of corps which are on the homeward route after having served their time in India.

One of the most important and interesting points connected with the prevalence of typhoid fever in India is as to whether the native population suffer from that disease. If it could be shown that they did then we need not go far in seeking for an explanation of its spread among Europeans, for with the customs and habits of the natives of India the disease-cause would be widely distributed in the surface soil. That cases of the disease do occasionally, though rarely, occur among them is not denied, but what is denied is that the races of India do, as a rule, suffer from the disease. On the contrary, it is contended that they are, practically speaking, immune, and as far as there is any positive evidence on the point of a statistical and clinical character, it is strongly corroborative of this view, as we have frequently had occasion to point out. Assuming its general correctness—as must, we think, be done, if only for the sake of argument, there are several ways in which it has been accounted for. That more especially favoured is that the diarrhœal disease to which native infants and children are subject is in reality typhoid fever. If this be so it is, of course, easy to explain the relative, or nearly absolute, absence of that fever in the

[1] The first notice appeared in THE LANCET of May 11th, 1901, p. 1352.

adult native population. The native, it may be said, having paid his tribute to typhoid fever in early life acquires thereby a relative immunity from subsequent attack. But in the case of Europeans at home it is difficult to diagnose typhoid fever from the clinical symptoms alone, and it is confessedly still more difficult in the case of the natives of India, where the term "fever" has a very wide and undefined significance and where it has been the practice to collect together a number of undifferentiated fevers and diseases of an anomalous sort and to affix one and the same label—that of fever—to the lot. On the other hand, typhoid fever does not appear to be a common complaint among the children of European parents resident in India.

An attempt, we are glad to say, is now being made to investigate this subject and to solve the problem of the prevalence or not of typhoid fever among the native populations of India by having recourse to a more exact and scientific method for its diagnosis than can be obtained where we have to depend solely upon a consideration of the symptoms and clinical history. We refer to the diagnosis of typhoid fever by means of the serum agglutination and sedimentation reaction test. An experimental investigation of this nature is now being carried on in connexion with the Research Laboratory at Bombay, and there is an interesting report on the subject in the *Indian Medical Gazette* for April last by Captain George Lamb, I.M.S. This medical officer considers that typhoid fever is much more common amongst natives, especially children, of India than is commonly supposed. This branch of study is, however, still in its infancy, and in the meantime it is quite allowable to indulge in some speculation based on the ascertained facts so far as we know them in regard to the alleged non-prevalence of typhoid fever among the native Indian population. It is a subject, as we have said, to which we have more than once called attention. That cases of this fever do occasionally occur among them is admitted, but their number is quite insignificant in comparison with those which occur among the European population in their midst. It is also a somewhat significant and noteworthy fact that the cases of typhoid fever which arise, for example, among the native army of India are most commonly recorded among Ghoorka troops coming from Nepaul (an elevated district with a relatively cool climate) to the plains of India. These are meat-eaters and spirit-drinkers like the British troops, whilst the natives of India are not. Moreover, we know how the habits of the natives and the disposal of night-soil in and around native jails lend themselves to soil-contamination but without, so far as ascertained facts are to be relied upon, causing the spread and prevalence of typhoid fever. May it not be that the great liability of the European in India and the immunity of the native to this form of fever is not so much attributable to any racial differences as to differences of food—that diet may be reckoned among the factors productive of enteric fever—that the typhoid bacillus, for example, may find a favourable soil, especially adapted to its growth and development in a flesh-feeding people which it does not find in the graminivorous races of India? It may be that there is a great difference between the two in regard to the nature and composition of their fæcal products, or in the bacterial intestinal flora in the two cases. Supposing this to be so, it would be easy (if we take note also of the factors of youth and recent arrival in the case of the European soldier) to account for the great liability of the British to be attacked and to die from this fever as compared with the native soldier on the one hand and the innocuous non-infectious properties and nature of the fæcal discharges of the latter on the other—the bacillus of Eberth or the disease-cause, be it what it may, not being present in such discharges owing to their not affording a suitable nidus for it. On physiological grounds it would seem that the nature of the food consumed by the natives of India is better adapted to the climate than is a dietary in which meat and beer (alcohol) enter so largely. It would however, be both impracticable and unwise, as far as the European soldier is concerned, to make any great change in this respect, but it might be possible, nevertheless, to consider whether his diet could not be more assimilated to that of the native and the requirements of the climate than is the case at present.

The typhoid bacillus must be much more widely distributed in nature than is generally imagined, and it is no longer tenable that enteric fever is an exclusively water-borne disease. The trend of scientific opinion in the present day is in the direction of the soil, although no essential difference has been made out between the soils of fever and non-fever areas—at least, that seems to be the reading of some of the latest researches and of the valuable pioneer work carried on by Dr. Sidney Martin and Dr. A. C. Houston of the Research Department of the Local Government Board in the recently published report for 1899–1900.

The truth is that there is still a great deal to be learned about the etiology and spread of typhoid fever and that much of the teaching and doctrine in regard to the subject has been hitherto expressed in a too peremptory and dogmatic way. Without assuming, for instance, that the bacillus coli becomes changed into the enteric bacillus we do not yet know all about the relations of one to the other and there exists a good deal of evidence to show that Sanarelli's experimental results are applicable to typhoid fever in the human subject and that auto-intoxication with the products of intestinal fermentation is a factor in the causation of typhoid fever. We now find that the typhoid bacillus will grow readily in some kinds of soil which have been sterilised and that, on the other hand, it would almost look as if the putrefactive bacteria were among its more formidable antagonists, and in the Sanitary Commissioner's report under review Professor Hankin is quoted to the effect that the enteric fever microbe is one that flourishes better in comparatively pure than in very polluted water.

We have devoted a large amount of space to this subject of typhoid fever in India at the risk, we fear, of wearying our readers, but the subject is one of great importance, considering the drain which this fever annually makes on the health and life of the young manhood of this country. We would only add one further remark and it is this: How far would it be practicable to introduce the biological system of drainage into Indian stations and military cantonments in place of the existing dry-earth system which, despite its advantages and simplicity, is nevertheless attended with difficulties and many possible risks and dangers to health? Passing on to other subjects in the report under notice, we find that there were altogether 83 cases of scarlet fever and six deaths in the European army in India—a disease of rare occurrence there. If we recollect aright the occasion of the importation of the infection to India was first of all recorded some years ago by Surgeon-General T. Maunsell, C.B., and the fact was noticed in Watson's "Practice of Physic." The infection on the present occasion (1899) was imported in the transport *Simla* and all, or nearly all, the cases were traceable to that source.

At pages 56 and 57 of the report there are some interesting data about dysentery and hepatic abscess. It may be mentioned that the mortality from the latter disease was 32 times greater among the European troops than among the native troops, while the admission-rate for dysentery was higher among the native soldiers. We pass over the statistics and remarks on venereal diseases, which show a decreased prevalence (pages 58 and 59), because we do not think that there has yet been time to form any correct estimate of the effect of the new measures which have been, or are being, adopted.

At pages 61 and 62 there are some brief remarks on the vital statistics of officers, women, and children which are worth being referred to if only because they so often escape notice owing to the space devoted to other subjects. A note is added illustrative of the need for caution in the use of serum diagnosis (Widal test).

Our review has already extended to such a length that we must omit all allusion to the sections devoted to the native army, the jails of India, and the general population. Section X. of the report (page 231 *et seq.*), under the head of "General Remarks," discusses in an interesting sketch the scientific work which has been undertaken in the investigation of Indian fevers and the progress of preventive inoculation for enteric fever.

NOTIFICATION OF TUBERCULOSIS.—Dr. W. H. Symons, the medical officer of health of Bath, in his annual report for 1900 mentions that 82 deaths occurred from tuberculosis. After every death from tuberculosis a visit is paid to the house, inquiries are made, free disinfection is offered, and advice is given as to the prevention of the disease. Dr. Symons adds that the voluntary notification of tuberculosis, with the consent of the patient, came into force on Nov. 24th last.

MEDICAL MEN AND THE WORKMEN'S COMPENSATION ACTS.

III.[1]

ALLUSION has been made in preceding articles to the medical referees constituted under the Workmen's Compensation Act of 1897 and to some of their duties. The medical referee has now been in existence for some years, and medical men have had experience of the responsibilities and difficulties of the post. The position assigned to him by the legislature is one of considerable importance, but the questions upon which he is intended to be the final arbiter are frequently questions upon which no human being could truthfully give the conclusive answer which the legislature seems to expect. For example, the employer wishes to put an end to weekly payments made to an injured workman who, he alleges, has completely recovered. The workman claims to be still suffering from symptoms which, he says, are the result of the accident. The question of whether he so suffers and whether the symptoms are due to the accident, or not in any way connected with it, may provoke conflicting opinions honestly formed by two competent medical men who have seen him from time to time ever since the accident took place, and perhaps before it. On their differing in opinion the matter is referred to the medical referee, perhaps a year or two after the accident, in order that he may read the medical evidence, examine the patient, and report. It is quite possible that his report in such circumstances may wisely leave the continuance of the workman's compensation largely to the discretion of the judge or arbitrator.

The duties of the medical referee (apart from those which we have mentioned in the second article, where a workman, dissatisfied with a medical examination made on him during the continuance of his weekly payments, goes on his own account to the medical referee) are performed on the appointment or at the request of the county court judge or arbitrator in accordance with the schedules of the Act of 1897 and sundry rules and regulations duly made in accordance with that Act. The principal provisions of these are as follow:—

Schedule II., Sec. 13.—The Secretary of State may appoint legally-qualified medical practitioners for the purpose of this Act, and any committee, arbitrator, or judge may, subject to regulations made by the Secretary of State and the Treasury, appoint any such practitioner to report on any matter which seems material to any question arising in the arbitration; and the expense of any such medical practitioner shall, subject to Treasury regulations, be paid out of moneys to be provided by Parliament.

Regulations, dated May 2nd, 1898, made by the Secretary of State and the Treasury:—

Regulation 2.—Before making any reference the committee, arbitrator, or judge shall be satisfied, after hearing all medical evidence tendered by either side, that such evidence is either conflicting or insufficient on some matter which seems material.....

Regulation 3.—Every reference shall be made in writing and shall state the matter on which the report of the medical referee is required and the question arising in the arbitration to which such matter seems to be material. ..... The reference shall be accompanied by a general statement of the medical evidence given on behalf of the parties, and if such evidence has been given before a committee or an agreed arbitrator each medical witness shall sign the statement of his evidence and may add any necessary explanation or correction.

Simultaneously with the making of the reference as above the injured man is ordered to submit himself for examination by the medical referee, or if he is not in a fit condition to travel this is to be stated in the reference. The reference has to be duly signed by whoever makes it, and countersigned by the registrar of the county court, who shall insert in it the name of the referee proper to be appointed, if no such name appear on it, and shall forward it to the medical referee, and the medical referee shall not accept any reference unless it is duly signed and sealed. Having received his "reference" the medical referee appoints a time and place for the examination of the injured man and sends him notice accordingly, examines him and the evidence submitted, gives his report in writing, and forwards it to the registrar from whom he received the reference.

Regulation 18.—The committee, arbitrator, or judge may, by request signed and forwarded in the same manner as the reference, remit the report to the medical referee for further statement on any matter to be specified in such request.

The medical referee, therefore, is an expert adviser or assessor of the judge or arbitrator, and is not in any circumstances a witness, although he may be summoned to be present at the hearing of a case in which he has reported. The legislature imposes considerable responsibility upon him, but in return it shows confidence in his skill and a laudable desire that the evidence of medical witnesses which may with perfect fairness be conflicting or which may almost unavoidably be coloured by circumstances shall be weighed by one who is himself an expert and who by his position should be absolutely impartial.

The regulation governing the presence of the medical referee during the arbitration is as follows:—

Regulation 19.—In any case of special difficulty the judge or appointed arbitrator may require the attendance of the medical referee at any proceedings in the arbitration subsequent to the receipt of the report at a date and hour to be arranged and the medical referee shall attend accordingly, but this regulation shall not authorise the medical referee being called as a witness.

With regard to the fees to be asked by the medical practitioner not a referee in cases where he is required to make an examination under the Act no scale is laid down, but medical men must settle a reasonable fee in accordance with their knowledge of the circumstances of those who will pay it, whether individuals or insurance companies. The following are the fees fixed by the regulations for the compensation of the medical referee; these are to be paid by the Treasury, the medical referee sending in to the Home Office each quarter in a prescribed form a statement of the payments due to him.

1. For a first reference, to include examination of the injured workman and written report, two guineas.

2. For a further statement under Regulation 18 on any matter not covered by the original reference, one guinea.

3. For a second or subsequent reference to the same referee in a further arbitration on the same case, to include examination, if necessary, and written report, one guinea.

4. Where a medical referee attends at the request of the county court judge or appointed arbitrator, for such attendance three guineas.

5. Where, in order to examine the injured workman or to attend on the county court judge or arbitrator, the medical referee is compelled to travel to a place distant more than two miles from his residence or such other centre as may be prescribed by the Secretary of State, in addition to the above fees, 5*s.* for each mile distant from such residence or centre.

The above may afford some idea of the views of the Treasury as to reasonable fees in cases of the kind contemplated.

In writing of the Workmen's Compensation Acts we have only dealt in general terms with those portions of them which are likely to be of interest to members of the medical profession at large who may at any time, particularly now that the "workman in agriculture" is a subject of compensation, be called upon to observe them. We do not quote the whole of the rules and regulations dealing with medical referees because we are inclined to assume that those who from time to time are appointed as such will possess themselves of copies of the Acts, regulations, and forms under which they have to perform their duties, or will purchase some legal handbook containing them, together with notes upon them. There are many such, some of them stocked with a considerable amount of learning, on the vexed questions decided or likely to arise in construing the Act, those by Messrs. Beven, Ruegg, and Minton-Senhouse being, perhaps, the principal ones. A handy small book not over-burdened with matter of this kind, which to a medical man is superfluous, is entitled "The Workmen's Compensation Act," by W. A. Willis, barrister-at-law. It costs 3*s.* 6*d.* and is published by Butterworth and Co., Fleet-street, and Shaw and Sons, Fetter-lane. As far as we know a new edition has not been brought out since the Act of 1900, but presumably one soon will be.

We have written above of insurance companies. No doubt all prudent persons liable as employers of workmen under these Acts will insure, and for the benefit of medical men who may have "workmen in agriculture" in their employment, and who do not wish to be responsible for all the accidents which may happen to them, we mention that they can be insured at the moderate premium of 3*s.* for every hundred pounds paid in wages, the rates for other workmen varying from 5*s.* to £1 5*s.* per hundred pounds paid in wages, according to the nature of the dangers associated with the insured persons' work.

[1] Parts I. and II. appeared in THE LANCET of May 18th (p. 1420) and 25th (p. 1487) respectively.

THE MEDICAL, SURGICAL, AND HYGIENIC EXHIBITION.

THIS annual exhibition maintains its popularity, as is evident from the increasing attendance year by year. Last year there were present, according to the statement of the chairman of the Organising Committee, Mr. Fred Weiss, in his inaugural speech on the opening day (May 28th), over 3000 medical men. The committee, he added, were very much encouraged this year by the number of applications made by new exhibitors.

On Tuesday afternoon the Queen's Hall, Langham-place, W., presented an animated appearance, calling to mind an Oriental bazaar rich in colour and abounding in air redolent with an indescribable mixture of aromas. One very interesting and important feature of the exhibition this year was the display of sanitary appliances for special medical and surgical purposes and for everyday purposes also. Considerable progress has been and is being made with appliances of this class, such as lavatory basins, water-closets, operating room sinks and tables, hospital sinks, &c., the aim being to secure greater cleanliness and convenience in operation than was hitherto possible. We shall describe some of these appliances at a later stage in this article. Of course there must be a certain amount of the commercial element connected with this exhibition, but we were glad to find that, on the whole, the visitors were spared much of the annoyance of the appeal of the tout which is too often characteristic of this kind of "exposition." Each section, as implied in the title of the exhibition, was well represented, drugs, special foods, surgical appliances, sanitary appliances, miscellaneous articles, periodical literature, books, &c., forming an attractive and engaging *tout ensemble*.

Fine chemicals, alkaloids, and drugs constituted the excellent collection of specimens shown by Mr. E. Merck (Darmstadt) whose London office is at 16, Jewry-street, E.C. As is well known, Mr. Merck issues periodically his "Notes on New Remedies" which give full information on the recent additions to pharmacy. Amongst the specimens shown were jequiritol and jequiritol serum (a substance which produces artificial conjunctivitis), bromipin and iodipin in capsules, the new halogen oils, various glycerophosphates, cacodylates, physiologically pure sodium salicylate, hæmol, hæmoglobin in scales, and other fine preparations. Besides "hypodermules" of suprarenal gland solution with and without chloretone, Mr. Frank A. Rogers (327, Oxford-street, London, W.) exhibited a series of special sprays for treatment of the larynx and naso-pharynx. The method of spraying into the nose or throat direct from hypodermules or sterilised sealed glass capsules is worth attention. Messrs. Cooper's exhibit (80, Gloucester-road, London, S.W.), though tastefully decorated with syphons of the oxy-carbonated water now connected with their name, showed also a series of fine drugs as well as different forms in which they may be administered. Amongst the former may be mentioned acoin (a local anæsthetic and for ophthalmic injection), various cacodylates, nirvanin (an anæsthetic giving a longer effect than cocaine), and amongst the latter cachoids (that is, soluble wafer capsules) gelatin capsules, medicated pastilles. The exhibit also included the "globena" meat essences. Besides palatinoids and bi-palatinoids (which afford an ingenious and satisfactory way of administering drugs), Messrs. Oppenheimer, Son, and Co., Limited (179, Queen Victoria-street, London, E.C.), exhibited traumatol or cresylic iodide which is, as we have pointed out, a powerful bactericide not inferior to mercuric chloride while it is, comparatively speaking, non-toxic. The exhibit included a new hypodermic case and some medicine cases suitable for attachment to a bicycle. Messrs. Parke, Davis, and Co. (111, Queen Victoria-street, London, E.C.) represented their specialities in standardised fluid extracts, chocolate-coated tablets, elixirs, soluble elastic capsules, and sera. We have recently described adrenalin which is regarded as the active principle of the suprarenal gland. The exhibit included an interesting series of compounds of mercury, silver, copper, and iron with nucleinic acid. Similarly we have recently called attention to some favourable features of the Abbey Effervescent Salt (144, Queen Victoria-street, London, E.C.). It is composed of well-known saline aperients and is agreeably effervescing. The interesting preparations known as bromaurum and hydraurum were the feature of Messrs. Arthur and Co.'s stall (69, Berners-street, London). They have been used in a variety of maladies—in rheumatism, epilepsy, hysteria, and diabetes. The neutral solution of lime and iron, the biniodide antiseptic soap, and a special cream soap, cleansing and antiseptic, are also worthy of mention. Messrs. Rebman, Limited (129, Shaftesbury-avenue, London, W.C.), besides exhibiting recent publications, had a space assigned for serum preparations which are sold in cases containing two hermetically sealed flasks each. Amongst these were Lustig's and Haffkine's anti-plague vaccine and Yersin's serum.

There was a great variety of special foods shown, the majority of them being either milk itself modified in some special manner or a milk product. The Aylesbury Dairy Co. (St. Petersburgh-place, Bayswater), for example, showed all sorts of modified milk, peptonised milk, humanised milk, sterilised milk foods, and sparkling Koumiss. The exhibit included a very interesting series of products illustrating the researches carried out in the company's laboratory on the composition of human milk contrasted with the milk of the cow, the goat, the ass, and the mare. The exhibit afforded excellent evidence of the system of scientific control which this company, to their credit, have rigidly adopted. Plasmon is now well known as the soluble proteid of milk unimpaired in any way in the process of preparation. The representatives of the company (56, Duke-street, London, W.) demonstrated some very interesting applications of plasmon, as, for example, in whipped form, in ices, in beef-tea, in cocoa, and so on. An excellent example of the modern scientific way in which the business of a dairy is carried on was well typified in the exhibit of Messrs. Welford and Sons (Elgin-avenue, Maida-vale, London, W.). This company make a very special feature of asses' milk, a herd of milch asses being kept expressly for this purpose under the strictest sanitary precautions. The exhibit included peptonised, humanised, and sterilised milk, all produced under the same control of a large scientific staff. Peptone is the precipitated proteid of milk prepared by the Protene Co., Limited (36, Welbeck-street, London, W.). Protene has many valuable applications, as in bread, biscuits, and in diabetic foods. The advantages of Hovis (Macclesfield and London) bread are well known; it contains the germ of the wheat and possesses an attractive nutty flavour and is never dry. By the use of Hovis flour the germ of wheat may be included in biscuits and other articles of food. An interesting addition to the exhibit this year was "Lito," a new self-raising flour. Close by this stall was Cerebos Salt, which is now recognised as a great advance on the old table and culinary article, keeping not only dry and in a fine form, but containing also a small proportion of the soluble phosphates (3, Maiden-lane, London, E.C.). Amongst nutrient meat preparations must be mentioned as of distinct merit "Hipi," a pure mutton essence (G. Nelson Dale and Co., 14, Dowgate-hill, London, E.C.). As we have shown in our columns it is a really nourishing and palatable article, affording an agreeable change from the more often used beef extract. Messrs. Fairchild Brothers and Foster (Snow-hill-buildings, London, E.C.) showed their well-known digestive and digested products. Amongst the former is pepsencia (a solution of the essential organic ingredients of the gastric juice taken directly from the peptic glands), pepsin in tablets now known as "pepules," and enzymol, a solution obtained from the stomach glands in a carefully sterilised menstruum. An interesting application of this latter enzyme is in dissolving albuminous matter in the various forms occurring in false fibrinous membrane, sloughing tissues, &c. Of digestive products panopepton may be mentioned perhaps as the best type, containing the entire substance of beef and wheat-flour in rapidly diffusible and assimilable form. Extracts of meat were represented in various forms at the stall of Liebig's Extract of Meat Co. (9, Fenchurch-avenue, London, E.C.) Amongst the new preparations added to the already excellent list is "Oxo" which, as we have shown in our analytical columns,

is not a mere stimulant but a nutrient preparation also. The Manhu Foods (88, Charing Cross-road, London, W.C.), are represented as diabetic foods though containing carbohydrates to the same degree as wheat-flour because the starch is said to be changed in such a way that it is acted upon by the intestinal juices so completely as not to aggravate the condition of the diabetic. These foods appear to have been tried by some physicians who report good results in spite of the theories held that carbohydrates should be excluded from the regimen of diabetic patients. Similar arguments are advanced by the Cheltine Food Co., Limited (Cheltine Works, Cheltenham) who exhibited a number of foods of a special kind. They hold that the starch of the cereals used is still starch, but that owing to a certain process of manufacture it may serve its normal purpose in the nutrition of the body of the diabetic patient instead of being excreted as sugar. These statements seem to us to require very definite clinical confirmation. A very great variety of special foods was shown by Bovril, Limited (152 to 156, Old-street, City-road, London, E.C.). The preparations included raw meat juice as well as the extracts and also the emergency foods and rations which gave satisfaction in the South African war. Close by was the exhibit of Virol, Limited, of 152, Old-street, City-road, London, E.C. We have already described this preparation which is composed of the proteids and fat of beef and eggs, the marrow of beef and extract of malt, all these being associated with their respective mineral salts which are of dietetic value. Messrs. Cadbury Brothers (Bourneville, Birmingham) exhibited their well-known cocoa. These manufacturers make special claim for the purity of their cocoa, the process of manufacture relating only to the fine grinding of high quality cocoa and the expression of a good deal of its indigestible fat. We have already critically examined the special foods of Messrs. Callard and Co. (65, Regent-street, London, W.), and invariably we have been enabled to confirm the special claims made for these foods, such, for example, as the food for the diabetic, the food for reducing weight, the food for indigestion, and the food for the rheumatic and gouty. A very satisfactory feature of Nestlé's condensed Swiss milk (H. Nestlé, 48, Cannon-street, London, E.C.) is the maximum proportion of fat which it contains, an average of just over 13 per cent. The exhibit included condensed milk without sugar and a special food for infants. We have published analyses of somatose, a tasteless and odourless powder made from beef and consisting largely of albumose. The company (165, Queen Victoria-street, London, E.C.) now prepare a fluid somatose which is more convenient for administration than the powder. We have also described analytically Maggi's excellent consommé for the preparation of a nutritious soup. It contains something more than the mere extractives of meat—in fact, the nutrient principles. The tonic bouillon contains, as we have also shown, an assimilable form of iron. Messrs. J. and G. Cox, Limited (Eastcheap-buildings, London, E.C.) exhibited their sparkling gelatin which is a pure product and reliable for dietetic purposes. Besides the well-known fluid malt extract, M. Hoff (29, Newbury-street, London, E.C.), exhibited liqueur ironol and Mattoni's iodine preparations. Meat preparations were of course the feature of the exhibit of Messrs. Brand and Co. of Mayfair, London, W. They showed raw meat juice as well as essences and peptones and a nutrient powder which we have already described in our analytical columns. It is prepared from the fibre of muscle and contains the proteids unaltered and uncoagulated. Messrs. G. Van Abbot and Sons (104, Wigmore-street, London, W.) showed their various foods for diabetics, dyspeptics, and invalids, including the well-known gluten bread, bran gluten rolls, soya bread, almond bread, and so on. We note that they are introducing a new and cheap biscuit for diabetic patients called the Midolia biscuit. In the analysis given of this biscuit the proteids are recorded together with the cellulose as 46·14 per cent. This is a perfectly unintelligible association, proteids, of course, constituting flesh-formers and cellulose being of no food value whatever. Hence from this analysis the food value of the biscuit cannot be deduced.

Next week we propose to give an account, amongst other things, of the interesting and novel series of sanitary appliances which were offered for inspection and which formed a very important and attractive feature of this year's exhibition.

(To be continued.)

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

THE eighth annual report and balance-sheet of the London and Counties Medical Protection Society were received and adopted at the annual general meeting held at 12, New Court, Carey-street, Lincoln's Inn, W.C., under the presidency of Mr. Jonathan Hutchinson, on May 28th. Though the number of members present was only 17 considerable discussion took place before the adoption of the report.

The annual report of the Council stated that the society had made very satisfactory progress both in numbers and in financial position. A large number of members had availed themselves of the help of the society and the increasing number of members made the work considerably heavier. As usual, a great many cases had been dealt with in which patients had tried to evade paying for the services of their medical attendants by alleging negligent or unskilful treatment. As a rule, it had sufficed for the society to undertake the case for the fees to be paid forthwith. Unceasing efforts had been made to suppress unqualified practice, but unfortunately the highly unsatisfactory state of the law enabled quacks to continue their evil practices with impunity. The interests of the dental section had not been overlooked and a batch of dental cases will come before the next meeting of the General Medical Council in regard to unprofessional advertisements. In accordance with precedent the Council did not publish details of cases in which the assistance of the society had been sought and obtained. When a member of the society complained of unqualified practice in his own immediate neighbourhood the matter had been taken up and dealt with as one directly concerning the interests of the member. The reserve fund had now nearly equalled a sum representing 15*s.* for every member of the society, but it would, of course, have to be increased as new members joined.

Dr. L. LIEBSTER commented on the very vague terms in which the report had been drawn up and asked for the number of the quacks who had been prosecuted by the society and also how many members there were in the society.

This speaker was followed by Mr. E. R. DAWSON who explained that it was difficult to get new members in his district because of the evasive and impotent reply that had been received from the society in answer to a letter asking for the prosecution of a quack. He had noticed that the Medical Defence Union not only secured the credit of doing a great deal of work but they took care to bring the facts well before the profession. He was not at all satisfied with the attendance at that meeting and would like to know the number of members in the society so as to judge what percentage was present.

Mr. A. G. R. FOULERTON (honorary financial secretary) stated that the number of members was somewhere between 1600 and 1700, and he suggested that it was possible to arrive at the number by calculating from the figures in the balance-sheet.

Dr. HUGH WOODS (general honorary secretary) replied at great length concerning the principles which governed the management of the affairs of the society by the Council. He gave a brief sketch of the present position of the law as to medical practice and stated that the Council had not seen its way to carrying out the prosecution of a quack during 1900.

Dr. LIEBSTER said that he was quite satisfied and the accounts and balance-sheet were unanimously passed. The various officers of the society were re-elected and the proceedings closed with a vote of thanks to Mr. Jonathan Hutchinson for taking the chair.

ASYLUM REPORTS.

Derby Borough Asylum (Annual Report for 1900).—The average number of patients resident during the year was 304 and comprised 143 males and 161 females. The admissions during the year consisted of 94 patients—viz., 51 males and 43 females. Of these nine—viz., five males and four females, were not first admissions. Dr. S. Rutherford Macphail, the medical superintendent, states in his report that among the admissions were 10 patients from the union who were afterwards transferred from the pauper to the

private class. Five males and four females among the admissions had formerly been under treatment in this asylum. "Only six of the nine cases were relapses after previous recovery; they had, on an average, kept well for four years and one month since their discharge." The mean age of the patients admitted was 43 years, the youngest being 16 and the oldest 82 years. Five of the patients admitted were transferred from other asylums and were all chronic cases. Forty-two per cent. of the admissions were cases of recent and, possibly, curable insanity, while the proportion of general paralytics was less than that of the previous year, but against this should be set the tendency each year to send in more senile and hopeless patients who hitherto would have been cared for in their own homes or in workhouses. Suicidal tendencies were present in 54 cases admitted, and 17 of these were actively suicidal and required constant watching to prevent self-destruction. Only eight of the admissions were in good or average bodily health, while four were admitted in a critical and almost moribund condition, and of these three died within a fortnight. Of the causes of insanity among the admissions alcoholic excess was found in 21 cases, influenza in 10, and old age in seven cases; 31 patients were predisposed to insanity on account of hereditary influences, and 16 had had previous attacks. The number of cases discharged as recovered during the year amounted to 34, or 11·1 per cent. of the average number resident. The number of deaths was 44—viz., 24 males and 20 females, or 14·4 per cent. of the average number resident. "Two-thirds of the deaths occurred in the first quarter of the year and were indirectly the result of a severe epidemic of influenza." General paralysis was the cause of death in 16 cases, or 36 per cent. of the total number of deaths. The average length of residence of these patients was under 10 months. Cardiac disease was responsible for four deaths and three patients died from phthisis. One case of suicide of a remarkable nature occurred and was the subject of a coroner's inquest. A female patient suffering from melancholia "tore out her tongue and threw it on the floor by the unaided use of her fingers." There was extensive bleeding which was soon controlled, but the shock was severe, and being a sufferer from heart disease she died 42 hours afterwards. "There had been no previous attempt at self-destruction by this patient, but she was regarded as suicidal." The possibility of such an occurrence had not been contemplated. "It was unfortunately impossible," says Dr. Macphail, "to prevent the other patients from hearing the details of a case of this sort, owing to the publicity given it by the local press. During the succeeding few weeks four of my actively suicidal patients told me they had tried, without success, to pull out their tongues." During the months of January and February a severe epidemic of influenza prevailed, affecting altogether 117 persons, including patients and staff. As compared with previous epidemics the symptoms and complications were chiefly abdominal; 41 per cent. of the patients and 30 per cent. of the staff were affected. A married woman who was admitted on March 1st (1900) was safely confined of a child on the 26th and she made a good recovery. Lectures and demonstrations by the medical staff are systematically given to the nursing staff. The Lunacy Commissioners in their report state that the institution is in a very favourable condition as regards management. In every case of death a post-mortem examination was made and the case-books and other medical records continue to be very well kept.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Brighton Urban District.—Dr. Arthur Newsholme gives some interesting tables in his current annual report as to the value of isolation hospitals in the control or limitation of the spread of scarlet fever. Such tables are of considerable value in view of the discussions which have recently taken place upon this subject. Scarlet fever prevailed in a mild type in Brighton last year and Dr. Newsholme asks whether, having regard to such mildness, the town obtains a *quid pro quo* for the somewhat heavy outlay which the machinery of control demands. He, however, answers the question unhesitatingly in the affirmative. He thinks that the isolation of scarlet fever cases in hospital tends to diminish the virulence of the disease and that such isolation, generally speaking, has had an influence in bringing about the present benign type of the disease. When, and if, the type of disease becomes more virulent there will not be wanting those who will allege that such virulence has been produced by aggregation in hospital. We cannot here reproduce all Dr. Newsholme's tables in this connexion, but those medical officers of health who take interest in this question may be glad to consult them. We present, however, one table relative to the differences in fatality-rate between cases treated at home and hospital isolated cases, and it has to be noted that the average is enormously in favour of the hospital.

Year.	Admissions to sanatoria per cent. of total notified cases.	Case-mortality per 100 cases.	
		Among patients treated at home.	Among patients treated in sanatoria.
1891 (from March 1st)	70·0	—	—
1892	77·7	6·0	2·5
1893	70·6	2·5	1·6
1894	82·2	2·6	1·3
1895	77·4	2·3	2·6
1896	82·6	2·3	2·0*
1897	81·6	3·3	3·7
1898	82·7	3·1	1·6
1899	85·5	3·7	0·9
1900	87·8	5·6	1·7

* Including one death after the patient returned home.

Obviously patients are at times too ill to be sent to hospital, and in this sense the figures relative to the hospital cases are favoured, but, on the other hand, very severe cases are frequently sent to hospital on account of the better nursing to be obtained there, while among the cases treated at home are a large number of children of wealthy parents among whom the death-rate is likely to be but small. An interesting account of an outbreak of milk-borne scarlet fever is embodied in Dr. Newsholme's report. With regard to diphtheria tables illustrative of the relative prevalence of this disease among the scholars of the board schools and the voluntary schools are given, and the figures show a very considerable excess of attacks among the children in board schools—i.e., the excess in 1899 was 30 per cent. and in 1900 86 per cent. A table showing the age-incidence of diphtheria in relation to school infection is here reproduced:—

Percentage of Fatal Cases at each Age-group.

Ages.	Cases in which there was no school attendance.	Cases in which there was school attendance.	
		(a) Including secondary cases.	(b) Excluding secondary cases.
0-3 ...	23·4	2·7	0·4
3-13 ...	34·3	89·2	93·7
Over 13 ...	42·3	8·1	5·9
—	100·0	100·0	100·0

The excess of diphtheria in some schools over that in others is, perhaps, Dr. Newsholme thinks, to be accounted for partially by the varying activity on the part of teachers to procure the return of convalescent children to school in order that the average attendance may be as little diminished as practicable. The experience of Brighton is, in common with practically all other towns, that diphtheria spreads largely by unrecognised cases and by what may be termed persistently infectious cases. As Dr. Newsholme observes, there is need for a much larger use of medical aid in determining why children are absent, and whether they may safely return to school; in other words, better machinery and

increased expenditure are essential. The voluntary notification of phthisis is now in operation in Brighton, the sum of 2*s.* 6*d.* being paid for each notification received, save in the case of a certificate from an official in his public capacity, when the fee is 1*s.* On a case being notified the patient is visited by one of the medical officers of health, particulars are taken, and advice is given. Japanese paper pocket-handkerchiefs are left when required, and they seem to be appreciated greatly. The experience of the year has been that the voluntary notification of phthisis can be worked without friction, and the patient, whose occupation has in no case been interfered with, has always been grateful for the advice given. It is, however, sometimes found that when a second visit is made the house is occupied by new inmates who have taken up their quarters there before cleansing and disinfection have been accomplished. A more rigid system of registering changes of address would assist administrative measures.

Macclesfield Urban District.—This district suffered somewhat heavily from enteric fever during 1900, and Mr. J. Hedley Marsh has been impressed with the high directly infective power of this disease under certain conditions. He tells us that in one localised outbreak he traced no less than 75 per cent. of the cases to direct infection, and in another outbreak he regarded 50 per cent. of the cases as having been so caused. He thinks that the delay in notification is largely responsible for the spread of the disease, and as the sanitary authority have now provided for the performance of Widal's test gratuitously doubtless the medical practitioners in the district will have any suspicious cases thus examined as early as possible.

Crewe Urban District.—Dr. Alfred Greenwood refers in his annual report for 1900 to the large proportion which in this district still-born children bear to the total number of births. The annual rates for the last 11 years have ranged from 3 per cent. to 5·8 per cent. of the total births.

Finchley Urban District.—Dr. Henry Kenwood, in making some observations upon the health of schoolchildren, strongly advocates the periodical inspection of the scholars by medical men in the manner which now obtains in Germany. As an illustration of the advantages of this system mention is made of Leipsic, where, as a result of the examination of the scholars in the schools, there were detected two cases of phthisis, 11 of heart disease, 10 of spinal curvature, 63 of obstructive growths in the nose and throat which led to defects in speech, 75 of defects of vision, and 10 of defects of hearing. It is difficult to over-estimate the advantages of a system such as this provided the defects found are properly dealt with. The removal of adenoids alone would probably be productive of the greatest comfort and wellbeing to the children operated upon, and how much unnecessary strife may the defective vision and hearing have led to between pupil and teacher? We quite agree with Dr. Kenwood that the arrangements *qud* health protection for dealing with absentees might be enormously improved.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 33 of the largest English towns 6561 births and 3674 deaths were registered during the week ending May 25th. The annual rate of mortality in these towns, which had been 16·5 and 16·8 per 1000 in the two preceding weeks, declined again last week to 16·7. In London the death-rate was 15·7 per 1000, while it averaged 17·4 in the 32 large provincial towns. The lowest death-rates in these towns were 11·2 in Croydon, 12·1 in Norwich, 12·6 in Brighton, and 13·6 in Bristol; the highest rates were 21·5 in Swansea, 21·8 in Birmingham, 22·1 in Salford, and 22·6 in Wolverhampton. The 3674 deaths in these towns last week included 385 which were referred to the principal zymotic diseases, against 394, 381, and 372 in the three preceding weeks; of these, 120 resulted from whooping-cough, 96 from measles, 55 from diphtheria, 49 from diarrhœal diseases, 38 from scarlet fever, and 28 from "fever" (principally enteric). No death from any of these diseases was registered last week in Huddersfield; in the other towns they caused the lowest death-rates in Brighton, Norwich, Oldham, and Halifax; and the highest rates in Swansea, Wolverhampton, Salford, and Preston. The greatest mortality from measles occurred in Portsmouth, Nottingham, and Sunderland; from scarlet fever in Preston; from whooping-cough in Swansea, Wolverhampton, Derby, and Newcastle; and from "fever" in Wolverhampton. The mortality from diarrhœal diseases showed no marked excess in any of the large towns. The 55 deaths from diphtheria included 22 in London, four in Birmingham, three in Bristol, three in Leicester, and three in Blackburn. No fatal case of small-pox was registered last week in any of the 33 large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylums hospitals during the week ending May 25th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2241, against numbers increasing from 1522 to 2052 on the four preceding Saturdays; 341 new cases were admitted during the week, against 371, 397, and 323 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 237 and 249 in the two preceding weeks, declined again to 191 last week, and were 98 below the corrected average. The causes of 39, or 1·1 per cent., of the deaths in the 33 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Bradford, Leeds, Sheffield, and in 14 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Blackburn, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·3 and 20·2 per 1000 in the two preceding weeks, further rose to 20·7 per 1000 during the week ending May 25th, and showed an excess of 4·0 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 14·2 in Perth and 18·9 in Leith to 22·0 in Aberdeen and 23·6 in Dundee. The 659 deaths in these towns included 40 which were referred to whooping-cough, 30 to diarrhœa, 19 to measles, two to scarlet fever, two to diphtheria, one to small-pox, and not one to "fever." In all, 94 deaths resulted from these principal zymotic diseases last week, against 99 and 89 in the two preceding weeks. These 94 deaths were equal to an annual rate of 3·0 per 1000, which was 1·2 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 49 and 41 in the two preceding weeks, further declined last week to 40, of which 19 occurred in Glasgow, 13 in Edinburgh, four in Leith, and three in Dundee. The deaths from diarrhœa, which had been 20 and 18 in the two preceding weeks, rose again to 30 last week, and included 17 in Glasgow, three in Edinburgh, three in Dundee, three in Aberdeen, two in Paisley, and two in Perth. The fatal cases of measles, which had decreased from 25 to 15 in the four preceding weeks, rose again last week to 19, of which 10 were registered in Glasgow, three in Greenock, two in Edinburgh, and two in Paisley. The mortality from scarlet fever corresponded with that recorded in the preceding week, while that from diphtheria showed a marked decline. The fatal case of small-pox occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 169 to 101 in the four preceding weeks, were again 101 last week, and were slightly above the number in the corresponding period of last year. The causes of 24, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·4 per 1000 in each of the two preceding weeks, declined to 26·4 during the week ending May 25th. During the past four weeks the death-rate in the city has averaged 26·9 per 1000, the rates during the same period being 16·0 in London and 21·5 in Edinburgh. The 175 deaths of persons belonging to Dublin registered during the week under notice were seven below the number in the preceding week, and included nine which were referred to the principal zymotic diseases, against 15 and 10 in the two preceding weeks; of these, five resulted from whooping-cough, three from diarrhœa, and one from "fever." These 9 deaths were equal to an annual rate of 1·4 per 1000, the zymotic death-rate during the same period being 1·9 in London and 3·3 in Edinburgh. The

fatal cases of whooping-cough, which had been seven and eight in the two preceding weeks, further declined last week to five. The three deaths from diarrhœa showed an excess over the number in the preceding week. The 175 deaths in Dublin last week included 28 of children under one year of age and 45 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a slight decline from the numbers recorded in the preceding week. Five inquest cases and three deaths from violence were registered; and 66, or more than one-third, of the deaths occurred in public institutions. The causes of nine, or more than 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Deputy Inspector-General of Hospitals and Fleets Thomas Bolster has been promoted to the rank of Inspector-General of Hospitals and Fleets in His Majesty's Fleet.

ROYAL ARMY MEDICAL CORPS.

Civil Surgeon James Bertram Clarke to be Lieutenant.

Major A. O. Fitzgerald has taken over medical charge of the Station Hospital and troops, &c., Golden Hill Fort, Isle of Wight. Surgeon-Captain Smith, A.M.R., assumes medical charge of troops, Buddon Camp. Surgeon-Captain A. Macdonald, A.M.R., proceeds to the Station Hospital, Edinburgh Castle, for duty.

ARMY MEDICAL RESERVE OF OFFICERS.

Brigade-Surgeon-Lieutenant-Colonel Henry William King, 2nd Volunteer Battalion the Cheshire Regiment, to be Surgeon-Lieutenant-Colonel.

VOLUNTEER CORPS.

Artillery: 4th Durham (Western Division, Royal Garrison Artillery): John Stewart Milne to be Surgeon-Lieutenant. 1st Norfolk (Eastern Division, Royal Garrison Artillery): Alexander Michael Ross to be Surgeon-Lieutenant. *Royal Engineers:* 1st Sussex: Robert Macfie Johnston to be Surgeon-Lieutenant. *Rifle:* 1st Volunteer Battalion the Essex Regiment: James Aitken to be Surgeon-Lieutenant.

THE WAR IN SOUTH AFRICA.

It must be confessed that to the ordinary reader in this country it is very perplexing and difficult—even with the aid of Lord Kitchener's laconic despatches and a good map—to follow out the military policy and course of events in South Africa. We hear of sweeping movements in this direction and that and we get summary statements from time to time of the captures effected by the British columns and of huge losses by the Boers in horses and live stock and in ammunition and food stuffs until the wonder is that any ammunition is left for the Boers to fight with or that anything is left for them to maintain a separate existence in the field. The extent and nature of the country are eminently suited, of course, for the Boers' elusive tactics, who at once split up and retire on the approach of a British column only to emerge again as soon as it has departed. It seems still to be the case that our forces have not sufficient mobility to catch the Boers, nor is this to be wondered at considering the distances that have to be traversed. Our possession of the railway is a great factor in our favour, but apart from the frequent raids made upon it by the Boers much of the fighting and many of the skirmishes are not along, or in the vicinity of, the track of the railway, and the number of horses required to mount our troops and to keep them moving in pursuit of the enemy is enormous. The following is an extract from a letter received by a member of our staff from a private in the Cameron Highlanders. The particular "Tommy Atkins" in question, who is evidently a rather observant person, bears out the views so frequently expressed in THE LANCET.

SIR,—There is a lot of mounted troops keep coming out here and the public think we should send troops home in return. I don't; there is not enough out here yet, the more troops the quicker it will be finished and will be cheaper in the end. Infantry is no use now only for guarding convoys and the railway. It is a very bad country and I am sure if people at home was but here to see it they would open their eyes.

The Boer leaders, whose names are by this time as familiar as household words with the British public, disappear and reappear on the scene of action in a somewhat perplexing way. They are neither caught nor do they surrender. Meanwhile, so far as the Orange River Colony is concerned, we really seem to be getting its civil administration into working order, and for the rest of the country we have only to possess our souls in patience and to await a possible sudden and unexpected collapse or a slow disintegration in the way of inanition of the force fighting against us. The lists of wounded which appear from time to time show that a chronic "sniping," alternating with an occasional acute engagement or skirmish, is still going on and that enteric fever holds an important place among the diseases of the army in the field. Happily, plague makes but slow progress and we do not hear of any severe outbreak or recrudescence of that disease such as has been recently reported to have occurred at Hong-Kong.

THE POST-GRADUATE EDUCATION OF NAVAL SURGEONS.

The April number of the *Archives de Médecine Navale* contains an appreciative notice of the recommendations made by the commission which was recently nominated to report upon the system of instruction in vogue at Haslar. "In its very interesting report," says the author, Dr. Portengen of the Dutch navy, "the commission in the first place insists upon the insufficiency of the existing course in so far as concerns the diagnosis and treatment of the tropical diseases which are to be met with at exotic stations." The attention of the commission had naturally been called to the School of Tropical Medicine recently established near the Albert Docks under the auspices of the Colonial Minister, but in its opinion the instruction at that institution lasted too long for the purpose in hand, and, moreover, included subjects, such as gynæcology, that were unsuitable. The several additions recommended by the commission to the Haslar course as it now stands—i.e., tropical pathology, blood analysis, and serotherapy—meet with the writer's unqualified approval, as does the proposal to establish special wards for men suffering from diseases that were acquired abroad. Dr. Portengen likewise thinks well of the stress laid upon the following subjects: removal of sick and wounded men; naval surgery; the equipment of hospital ships; and the application of the Roentgen rays. The extension of the course to four months and the appointment of an additional professor he regards as sufficient; and he approves the suggestion of offering special prizes for the encouragement of zealous students. Finally, he mentions with commendation the commission's advice regarding the supply of instruments for medical officers at a cost of 500,000 francs. The sole unfavourable criticism in this exhaustive article has reference to the omission of provision for an electro-technical examination in cases of beri-beri, "which," says Dr. Portengen, "is such a very valuable procedure."

DEATHS IN THE SERVICES.

Inspector-General William Kilner Swettenham (retired list), A.M.D., at his residence, in West Kensington, on May 21st, aged 84 years. He joined the army April 9th, 1841; became surgeon Oct. 14th, 1851; surgeon-major April 9th, 1861; and retired as inspector-general June 27th, 1868. He served with Havelock's column in the action of Mungarwar, attack and capture of the Alumbagh, the assault and relief of the Residency of Lucknow and its subsequent defence, and was wounded (grant of a year's service). He was present with Outram's Division throughout the occupation of the Alumbagh and also at the capture of Lucknow by Lord Clyde, and the subsequent campaign in Oude, including Buxar Ghat and Doondiakera (medal with two clasps).

SOUTH AFRICAN WAR NOTES.

Lieutenant P. G. Stock, R.A.M.C., is reported dangerously ill with enteric fever at Charlestown (May 26th).

Major Thomas, R.A.M.C., has left England for the seat of war in charge of a large draft of non-commissioned officers and men of the Royal Army Medical Corps.

THE ROYAL ALBERT HOSPITAL, DEVONPORT.

The recent bazaar held in aid of the funds of this hospital realised over £700, and after paying expenses leaves £635 for the benefit of the funds of the institution.

Captain F. E. Gunter, R.A.M.C., has been granted a gratuity of £250 yearly by the Government of India on account of an ailment contracted by him in the performance of his duty in August, 1897.

Lieutenant-Colonel W. Johnston, who has been for over a

year officiating as Assistant Director, A.M.S., has retired from that hospital.

Major G. H. Barefoot, R.A.M.C., and Lieutenant McGregor, R.A.M.C., have been appointed principal medical officer and assistant principal medical officer respectively at the Royal Military Tournament.

Correspondence.

"Audi alteram partem."

THE NATIONAL HOME-READING UNION.

To the Editors of THE LANCET.

SIRS,—Had it not been for the war in South Africa and the great national bereavement there can be little doubt that the celebration of the millenary of King Alfred's death would have been one of the most notable events of the year. Yet although the celebration cannot now attain to the importance as a national festival which its promoters originally contemplated, no passing events can rob it of its significance, nor is the city of Winchester, in which the representatives of universities and learned societies will shortly assemble, any less interesting as the capital of the great king. Its thousand years of association with his name and fame make it in a peculiar sense the birthplace of English national life, and its abundant historic monuments mirror the successive developments of this life with very singular fulness. Will you allow me to call the attention of your readers to the summer assembly which the National Home-Reading Union has arranged to hold at Winchester from June 22nd, when the Mayor has kindly promised to welcome the visitors until June 29th, when the members of the assembly will disperse, visiting Athelney, King Alfred's refuge in his darkest days, or Wantage, the scene of his decisive battle with the Danes, on their way to their respective homes? During the week lectures will be given by Dean Stubbs, author of "God's Englishmen, the Prophets, and Kings of England"; the Bishop of Bristol, on "King Alfred as a Religious Man and an Educationalist"; Professor Skeat, on "The King's English: Alfred the Great to Edward VII."; Rev. Dugald MacFadyen, on "Alfred the King of the West Saxons"; the Dean of Winchester, on "Winchester Cathedral"; Mr. N. C. H. Nisbett, on "Wolvesey Castle"; Dr. T. J. Lawrence, some time deputy Whewell Professor of International Law at Cambridge, on "Alfred as Statesman and Lawyer" (four lectures); Mr. Philip Wicksteed, on "Alfred as a Man of Letters" (four lectures); Mr. J. E. Marr, F.R.S., Sec. G S., on "The Application of Geology to Scenery" (four lectures); and others.

The course last named indicates a secondary purpose of the meeting—namely, the study of the geology and botany of the district as well as its archæology. The afternoons of the assembly will be devoted to visits to the places and monuments associated with the great king's fame, as well as to the exploration of the memorials of mediæval times with which the district abounds, such, for example, as the Cathedral, Wolvesey Castle, Hyde Abbey, and the Hospital of St. Cross, where the "Wayfarer's Dole" of bread and beer is still given to strangers who ask it. The assembly is open to all who obtain tickets from the Secretary, National Home-Reading Union, Surrey House, Victoria Embankment, W.C. I am, Sirs, yours faithfully,

ALEX. HILL,
Master of Downing College, Cambridge.

Surrey House, Victoria Embankment, London, W.C., May 22nd, 1901.

"HÆMORRHAGIC TYPHOID FEVER."

To the Editors of THE LANCET.

SIRS,—Having once attended a case of hæmorrhagic disease I am inclined to think with Dr. Eshner that its pathology more often points to a degraded state of the blood and blood-channels than to the toxic effect of alcohol or, indeed, any other condition. The case was one of small-pox and the horrible appearance of the body both before and after death is an experience not easily forgotten. The whole surface of the body was of a blue or rather prune-juice colour. There was a very low temperature and death took place in something under two days. He was a quiet, respectable man and had no history of either alcoholic or other excess. On account of the panic raised in the place we buried him in the dead of night under, I must say, rather dramatic circumstances. Mr. George Ormsby, now of Runcorn, who kindly assisted me in the case, I have no doubt will remember the event, for it was of a very startling character and one not often coming within the ken of even the busiest practitioner.

I am, Sirs, yours faithfully,

Kettering, May 25th, 1901. JAMES MORE.

"LOCAL *v.* GENERAL ANÆSTHESIA IN CERTAIN CASES OF ABDOMINAL SURGERY."

To the Editors of THE LANCET.

SIRS,—Mr. T. H. Morse's remarks in THE LANCET of May 11th, p. 1322, raise the interesting question of shock in cases of abdominal operations and the part, if any, which anæsthetics play in producing shock. Few surgeons, I imagine, certainly few anæsthetists, will agree with Mr. Morse in placing the anæsthetic first as a cause of shock. It is open to doubt whether there ever is a patient on whom it is safe to operate but whom it is unsafe to anæsthetise. To begin with, death from shock of operation was no unknown thing before the introduction of anæsthetics, but death from shock due to an anæsthetic alone, other than chloroform, is so far, I believe, unrecorded. Therefore we know that operations alone can kill by shock; we have no evidence that ether alone can do so. Again, it is, as your correspondent Dr. S. H. Long[1] points out, not uncommon to administer anæsthetics to a collapsed patient and to notice the general improvement of circulation and improvement under the influence of the anæsthetic. The main factors, I believe, in the production of shock are the severity of the operation and the time taken in its performance. It is only by dulling the surgeon's appreciation of the value of rapidity in operating that anæsthetics can be blamed for the production of shock. Since the introduction of anæsthetics surgeons have naturally become more indifferent to the length of time which they occupy in performing operations, yet this has a most important bearing on the patient's chances of recovery. The anæsthetic chosen also, no doubt, makes a difference. Chloroform by the lowered blood-pressure it induces probably adds to the facility with which shock may be produced. Ether, on the other hand, will often render operation safely possible on a patient who might otherwise succumb from shock. Long administration of ether probably adds to the chance of the patient's dying after the operation when reaction from the too prolonged stimulation sets in. That is another matter and is avoidable by proper discrimination in using anæsthetics. The danger of inhalation of vomit which Mr. Morse refers to is completely avoidable by proper washing out of the stomach before operation and if necessary again later. This can easily be performed while the patient is anæsthetised without prolonging the anæsthesia, as I have pointed out.[2] In the abdominal operations which I have seen performed under local anæsthetics though no pain was felt the reflex effects of manipulation of abdominal contents were enough to impede the surgeon and to distress the patient, and shock was certainly no less than it would have been under general anæsthetics properly chosen and administered. To what extent the chance of shock varies with depth of anæsthesia is uncertain, but whether shock is less likely under deep anæsthesia or under light, at any rate evidence seems to show that shock is less likely under general anæsthesia suitably produced and maintained than altogether without it.

I am, Sirs, yours faithfully,

Sloane-terrace Mansions, S.W., May 28th, 1901. J. BLUMFELD.

"THE METROPOLITAN WATER-SUPPLY."

To the Editors of THE LANCET.

SIRS,—Will you allow me to point out, in connexion with your annotation on water-supply in THE LANCET of May 18th, that the figure quoted for filtration—viz., 1·12 gallons per square foot per hour—is the least rapid instead of being, as

[1] THE LANCET, May 25th, 1901, p. 1493.
[2] THE LANCET, Sept. 23rd, 1899, p. 833.

stated, the most rapid of all the companies, and that the use of such language as "the dirtiest water" is not justifiable, considering that the differences in colour, like those in analysis, are in measurements absolutely unappreciable except by scientific method. I inclose the official report for March and remain, Sirs,

Yours faithfully,

J. GOODWIN, Secretary.

Grand Junction Waterworks Company, South Molton-street, London, W., May 22nd, 1901.

*** We much regret that through an unfortunate oversight we stigmatised the figure quoted for filtration of the Grand Junction water (namely, 1·12 gallons per square foot per hour) as "the most rapid of all the companies." As a matter of fact, the rate is the least rapid. But it is not correct to say that "differences of colour, like those in analysis, are in measurements absolutely unappreciable except by scientific method." The dirty colour of the water supplied by some of the metropolitan water companies can frequently be detected by the simple method of inspecting it in a glass water-jug or tumbler. Anyone who is supplied by the Lambeth, the Southwark and Vauxhall, or the Grand Junction Companies can easily satisfy himself on this point by examining the water which he receives after the Thames has been in flood for a few days. Dirt has been defined as matter in the wrong place, and the matter which causes the brown tint is decidedly out of place in drinking-water. The word dirt is accurately applicable to the matter which is brought down by the Thames water when the river is in flood, and which, when not removed by the process of sedimentation and filtration by the water companies, is supplied by them in the water which they distribute to their customers. In the case to which the secretary refers, in which brownish water was distributed by the Grand Junction Company, it is evident that the failure to purify the dirty Thames water was not due to hurried filtration, as we had previously assumed in error; it must therefore have been due either to some other error in the process of filtration or to the fact that the storage reservoirs are totally inadequate to allow a sufficient time for the preliminary process of sedimentation.—ED. L.

"LEGISLATION AGAINST NATIONAL INTEMPERANCE."

To the Editors of THE LANCET.

SIRS,—It would be highly interesting to learn exactly what are Dr. Archdall Reid's real views respecting the relations of his theory of alcoholic immunity to Weissmann's speculation. In one case he appears as a Weissmannian out and out; in another he figures as an opponent of the view that it is the germ plasm alone which can transmit features from one generation to another. Might I recommend to those of your readers interested in the question of heredity a perusal of two works which will show them how very far from being accepted by biologists are Weissmann's views. The one is a little book by Hertwig, "The Biological Problem of To-day" (Heinemann), the other, Cunningham's translation of Eimer's "Organic Evolution" (Macmillan). Herbert Spencer has declared himself dead against Weissmann's views. His pamphlets are published by Williams and Norgate. If Dr. Reid (or anybody else) is going to build up a serious theory of heredity with Weissmannism as its basis, I warn him that he is constructing a house of cards and nothing more. Cunningham well asks: "Is there any criterion by which we can distinguish among variations appearing *de novo* at a post-embryonic period of life, those which are acquired, and those which are due to variations of the germ plasm? There is none, and therefore it would be as true to assert that there is no evidence of the inheritance of any individual variations as to say there is no evidence of the inheritance of acquired variations." This is a sufficient answer to Dr. Reid and others who desire to lay the whole burden of proof that acquired variations can be inherited upon us. There is evidence, only they will not study it, as far as I can observe. What we of the neo-Lamarckian school believe is not that all acquired variations can be or are inherited, but that such variations may be inherited. The first difficulty of the Weissmann theory is to show that the germ plasm is really separate from, and independent of, the body of which it forms part. I have been looking for years for evidence of this fundamental proposition of the theory. It has not yet been supplied. That is why all the rest of the superstructure is in a highly rickety state. Hertwig's account of the experiments of Wilson and others on division of the eggs of echinoderms and frogs and the subsequent results of the development of the embryos give the death-blow to the notion that the germ plasm is one thing and the body plasm another. Dr. Reid will find a fuller account of such experiments in Wilson's large book on the "Cell" (Macmillan). One last point. Weissmannism applies itself to explain the continuity of amœba plasm, equally with the germ plasm of man. Now Vöchting, cutting a piece out of the middle of a thallus of Lunularia vulgaris, chopped it up with a knife into pulp. Spread on moist sand, the pulp gave origin to any number of young fronds. Is there any distinction between germs and body plasm, then, in lunularia? I trow not; and if not in lunularia, then the theory of Weissmann cannot hold good for all organisms. It is cases like this one which, to my mind, reduce Weissmann's doctrine itself to a mass of illogical pulp. I see that Dr. Reid is to deliver a series of lectures on "Heredity" in Edinburgh. They are sure to be interesting and I hope he will publish them to enable us to understand his real relation to the biological theory under discussion. All I can say is that if no acquired characters can be inherited evolution becomes a mere farcical speculation, inheritance a theoretical fable, and all social reform, not to speak of medical teaching, a vain thing. I am, Sirs, yours faithfully,

Edinburgh, May 25th, 1901. ANDREW WILSON

THE COVENTRY PUBLIC MEDICAL SERVICE.

To the Editors of THE LANCET.

SIRS,—The ninth annual meeting of the Coventry Public Medical Service has just been held and the reports show a steady increase in membership. The number on the books is about 9000 and the collections for the year amounted to £1635 12*s.* There are 11 medical men on the staff who have the management entirely under their own control. It has been established on the wage basis principle and, broadly speaking, it works with success. This is the largest agency, we believe, under professional control for administering medical relief to the working classes and our experience on the wage limit question ought to be of some use to the profession at large. We have proved by a practical working scheme how it may be carried out. There is no absolutely perfect plan by which dispensaries or other institutions can be managed. Under any arrangement abuses will creep in, and although we do not adopt any strict detective system we do claim that under our system abuses are reduced to a minimum. Occasionally people are admitted whose incomes are above our limit, but we are always able to detect gross cases of abuse, and, approximately speaking, we enrol only the class of people for whom the service is intended. We have established a scientific branch for discussing questions of a medico-chirurgical character to which all eligible medical men in the neighbourhood are invited.

I am, Sirs, yours faithfully,

May 28th, 1901. W. RICHARDSON RICE, M.D. Dub.

"NEW YORK INSTITUTE OF SCIENCE."

To the Editors of THE LANCET.

SIRS,—Copies of the inclosed circular are being sent broadcast over this country, and judging from the number of letters I have received on the subject I fear they are having the effect anticipated by the senders—the exploitation of the British public for the benefit of an unscrupulous set of adventurers. My name is mentioned in these papers as practising hypnotism, and therefore, as it were, giving support to this institute; hence the inquiries like the one inclosed addressed to me. I need hardly say that I know nothing about these people. The more we know about hypnotism and the greater our belief in it as

a therapeutic agent in competent medical hands the less likely are we to approve of this wholesale method of encouraging the use of hypnotism by the general public. I have seen the course sent to inquirers on paying five dollars. The fee is exorbitant for the information given, but the teaching inculcated is, I consider, fraught with danger to public morality.

I fear this unscrupulous exploitation of hypnotism will lead to the occurrence of such crimes against the person and pocket as are described in your annotation in THE LANCET of May 18th, p. 1419, "Suggestion and Hypnotism in their Relation to Jurisprudence," on Dr. von Schrenk-Notzing's article. It is to be hoped that medical men everywhere will lend their influence to counteract the work of this bogus institute.

I am, Sirs, yours faithfully,
CHARLES LLOYD TUCKEY, M.D. Aberd.

Park-street, W., May 28th, 1901.

*** The circular justifies Dr. Lloyd Tuckey's description of it as "unscrupulous exploitation of hypnotism."—ED. L.

"THE MEDICAL PROFESSION AND THE FRIENDLY SOCIETIES."

To the Editors of THE LANCET.

SIRS,—I cannot altogether agree with "Colliery Surgeon's" letter. I am of opinion that if friendly societies paid 4*s.* per annum for adult male members and 5*s.* for juveniles and female adults the friction between the friendly societies and their surgeons would at once cease. This is really the cause of dispute. Surely this sum is a reasonable one. The difficulty we have to contend with is that friendly societies insist on our acceptance of a halfpenny a week for juveniles and 3*s.* 6*d.* or 4*s.* for female adults. This is not a living wage and is the bone of contention between the profession and the friendly societies. The Long Eaton (Derbyshire) friendly societies intend to start an institution, and to give an instance of the determination and unanimity of the club officials interested in the promulgation of the scheme they have decided to have a house-to-house canvass and to petition Sir Walter Foster to support the scheme. Mr. Gretton, M.P., has also been written to on the same question—viz., "Is it advisable to establish a friendly society's dispensary?" This means that in a town of 10,000 about 2500 belong to clubs, and if an institution of this kind is established all the married adult lodge members will put their wives and children in, thus increasing the number of dispensary members so considerably that of the eight town practitioners three or four will have to seek fresh fields and pastures new, for one man will have a fixed salary with free residence and have to do the work of two or three men. The general medical practitioner with clubs is better qualified to speak on this question than any member of the General Medical Council, the members of which have very probably never had a club appointment of any kind. It is only in places where the clubs have refused a fair fee that these institutions have been started. I am, Sirs, yours faithfully,

Derby, May 18th, 1901. W. H. JACKSON, M.B.

TEMPORARY ARMY RANK FOR VOLUNTEER OFFICERS.

To the Editors of THE LANCET.

SIRS,—Perhaps Mr. MacNeill or one of the service Members would, at the earliest opportunity, ask Mr. Brodrick if, in view of army order dated May 15th, 1901, wherein temporary army rank is conceded to militia officers employed during the present emergency, a like privilege will be accorded to other auxiliary officers—viz., volunteer officers, combatant and otherwise, "doing duty with troops." Such a concession should at least be granted to those officers holding commissions in the Reserve and Army Medical Reserve; at any rate, they should be allowed seniority from the date of their reserve commissions. If it is just and necessary to grant temporary army rank to volunteers serving abroad it is equally just and necessary to do so for home service; and, further, if in view of the withholding of the gratuity to which they are entitled at the end of 12 months' service, until their services are dispensed with, any grant is likely to be made for "wear and tear" of uniform. Undress uniform, which in the ordinary course of volunteer duties lasted for years or even perhaps for the whole of a volunteer career, is now worn and dirty and must be replaced.

I am, Sirs, yours faithfully,
V. M. S.

May 25th, 1901.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Decline of the Plague in India.—Disturbances in the Punjab.—The Increase of the Famine.—Fresh Hospital Accommodation in Calcutta and Darjeeling.

THE decline of plague is not general throughout India although the total mortality was 3288 as compared with 4093 last week. The number of deaths is nearly double that for the corresponding week last year. The deaths last week fell in Bengal (districts) from 1707 to 1196; in the Punjab from 547 to 524; in the North-West Provinces from 424 to 287; and in Calcutta from 215 to 156. On the other hand Bombay city shows a rise from 393 to 419, Karachi city from 270 to 297, Kashmir (Jumma) from 23 to 46, and Gaya from 320 to 518. The disease still lingers in the districts of the Bombay province—Belgaum, Dharwar, Thana, and Cutch, as well as in the Mysore State. There have been 12 deaths from plague in Agra. This is a new outbreak and it shows how the disease is gradually diffusing itself over the whole country. A recrudescence of plague in Bombay city seems to attain a greater height, to last longer, and to subside more slowly than in any other city. The general mortality in Bombay keeps up at the rate of over 90 per 1000 per annum. Out of 1390 deaths for the week ending April 30th 403 are recorded as due to plague. Deducting this number from that of the general mortality it would still show Bombay with a death-rate of over 64 per 1000 per annum. As there is very little cholera or small-pox in the city the excess mortality is imperfectly accounted for.

In the plague-stricken villages of the Sialkot district of the Punjab there have been serious disturbances and troops have had to be despatched to them. The hospital assistants suffered severely at the hands of the mob and the Naib-Tahsildar was beaten and his thatched huts were ignited. No Europeans were attacked except the assistant commissioner who was pelted with stones and mud. Punitive police will now be placed in the district.

The latest famine returns show that there are still nearly 300,000 persons on relief and the numbers have been increasing lately in the Bombay Presidency. In the native States there are 30,000 and in Hyderabad Deccan about 25,000.

With the increasing popularity of Darjeeling as a hill station and health resort additional provision has to be made for the sick. A new surgical ward has been added to the Eden Sanitarium "for the separate and special treatment of serious surgical, medical, and obstetrical cases demanding operation and special nursing." The new block of the Presidency General Hospital in Calcutta ought also to be ready in a short time. It is intended primarily to afford medical aid and accommodation to well-to-do middle-class European inhabitants of Calcutta, and to planters especially.

May 9th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Hospital Saturday Fund.

THE annual meeting of the Executive Committee was held on May 20th. The report showed that the total receipts in respect of last year's collection were £16,280 7*s.* 10*d.*, of which sum £17,874 1*s.* 7*d.* were received from manufactories and industrial establishments. This showed an increase over the previous year. The expenses of collection amounted to 4·69 per cent.; the number of establishments contributing was 1802. Of the amount collected £10,000 were distributed among the medical charities of the city. Four convalescent homes were associated with the movement, being supported by these funds.

Report of the Medical Officer of Health.

The annual report on the health of the city for the year

1090 has just been issued by Dr. Alfred Hill. Some interesting details are given at length. The sanitary questions discussed in the report relate to the reforms required, to those already accomplished, and to the possibilities of increased action in the future. One fact is made evident—that the death-rate of the city is too high, being above the average for the last 20 years. Inquiry shows that this is mainly due to long-standing causes, among which are overcrowding and the existence of insanitary conditions in the poorer dwellings; it is demonstrated that in six of the wards the death-rates are considerably in excess of the rate for the city as a whole. Dr. Hill, however, justly remarks that while many of the older houses are unfit for habitation it is undesirable to close any large number of them until suitable new houses have been erected. Much has been done by the Health Committee in cleansing courts, improving drainage, and generally diffusing knowledge of the laws of health among the poorer classes, and efforts continue to be made to keep the public attention directed to the subject. In a previous communication mention was made of a threatened action for libel upon the chairman of the Health Committee in connexion with some articles published in the *Birmingham Daily Gazette* upon the slum question. It is now stated that a writ has been issued claiming damages for libel against this paper. Counsel have been retained on behalf of the plaintiff, Alderman Cook, chairman of the Health Committee.

Adulteration of Butter.

At the police-court recently certain tradesmen were summoned for selling butter containing 70 grains per pound of boric acid and at least 6 per cent. of water in excess. It was stated that the butter came from Australia and was then dealt with by some operation of the defendants. The question of excess of moisture has been raised before the Longton stipendiary who refused to state a case. In this instance the case was adjourned pending an appeal.

General Hospital, Birmingham: Past and Present Residents' Club.

A most successful dinner of past (since 1891) and present residents of the Birmingham General Hospital was held at the Great Western Hotel on Friday, May 10th, 46 attending (including late "residents" from Edinburgh, Leeds, Manchester, Derbyshire, Hereford, and London), while 26 others wrote expressing approval. Dr. T. Sidney Short occupied the chair. It was decided to form a club of all residents since January, 1891, to which all past and future residents would be admitted on application. An annual dinner is to be held in April or May. All past residents of the "General" wishing for further information are invited to communicate with the secretaries, Dr. W. J. McCardie, 54, Newhall-street, or Mr. Howard J. Collins, General Hospital, Birmingham.

May 28th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Liverpool and District Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis.

A MEETING of the executive committee of the above branch was held on May 23rd at the Medical Institution under the presidency of Mr. Edgar A. Browne. The chairman said that they were all agreed as to the object of the parent association in London, which was primarily the prevention of consumption. Those of them who belonged to the medical profession could now assure the general public that consumption was a preventable and transmissible disease, and that if they could only follow the teachings of science and use such precautions as the medical profession were able to suggest that which some quarter of a century ago was regarded as a disease inherited from the parent by the child, and as handed down from generation to generation, had now been proved to be as easily preventable as any other contagious or noxious disorder. Moreover, it had been discovered by the exercise of common sense as well as by the exact modes of observation which now existed that in many cases of consumption the patients made exceedingly good recoveries. The methods by which they proposed to reach the masses were by the education of public opinion, by means of lectures given by medical men of known standing and approved by the committee, and by the distribution of various kinds of useful literature. They also wanted to invite the coöperation of the municipal bodies of the towns. He might say with some satisfaction that there had been no necessity for them to invite the coöperation of the municipality of Liverpool. The Health Committee, the ex-Lord Mayor (Mr. Cohen), and the medical officer of health (Dr. E. W. Hope) had thrown themselves into the movement with enthusiasm; they had been leaders in the work and there was no town in the whole kingdom which had made such practical progress in the matter as had Liverpool. Two large sanatoria were in course of erection in healthy neighbourhoods in the vicinity of the city. One, containing 60 beds, was being erected near Delamere Forest by private subscription and was intended for the treatment of early cases of consumption amongst the working-classes. This, it was hoped, would be ready for occupation in a few months. The second sanatorium was being erected on the banks of the river Dee, near Heswall, for the treatment of early cases amongst the poorer classes. The Health Committee had also adopted a new system of voluntary notification of consumption and they had also established depôts for sterilised milk. The demolition of insanitary property and the erection of better houses for the poorer classes were also means adopted by the corporation for the prevention of this fell disease. Sir John Willox, M.P., was appointed to be the chairman of the Liverpool branch of the association and Dr. William Carter was elected to the vice chair. Sir John Willox, Dr. William Carter, Dr. E. W. Hope, Dr. James Barr, Dr. T. R. Bradshaw, Dr. Nathan Raw, and Councillor Shelmerdine were chosen to represent the branch at the national meeting to be held in London in July.

The David Lewis Northern Hospital.

The vacancy at the David Lewis Northern Hospital caused by the resignation of Dr. Edward H. Dickinson is exciting much interest and will be keenly contested. The election, which is fixed for June 4th, will be made by a committee comprising 150 trustees of the charity. Dr. Dickinson was formerly lecturer in comparative anatomy and zoology at the Royal Infirmary School of Medicine prior to its incorporation with University College and was exceedingly popular with the students. He also took a great interest in the deliberations of the British Medical Association as a member of council. His resignation is much regretted by his colleagues, especially as he has not yet reached the specified age of retirement.—Mr. Benn W. Levy, with characteristic liberality, has offered to present the David Lewis Northern Hospital with the apparatus for the light ray treatment of lupus (Finsen). It is estimated that the cost of installing one lamp supplying four telescopes, together with the necessary accessories, will be about £1200. Mr. Levy has also undertaken to defray the expenses involved in working the telescopes during the space of a year.

The New Foundations in the School of Tropical Medicine.

The "Walter Myers Chair of Tropical Medicine," recently founded in commemoration of the late Dr. Walter Myers, has been bestowed upon Major Ronald Ross, F.R.S., late I.M.S., the lecturer on tropical medicine. Dr. J. E. Dutton has been appointed to the "Walter Myers Fellowship in Tropical Medicine," an institution which has been endowed for five years.

The Medical Faculty of University College, Liverpool.

The winter session of the Medical Faculty of University College will be inaugurated on Oct. 12th, when the opening address will be delivered by Dr. Oliver Lodge, F.R.S., the principal of Birmingham University, and until recently the professor of physics at University College, Liverpool.

May 28th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Housing of the Poor in Bristol.

THERE was established in Bristol a few years ago a committee for promoting the better housing of the poor, and it has quietly accomplished a great deal of good, principally in the way of obtaining the repair of dilapidated cottages or

the closing of those which were beyond repair. At the annual meeting of the committee held on May 24th Mr. Lewis Fry raised a warning note with regard to the provision by municipalities of working-class dwellings the rentals of which were not sufficient to pay the interest and repayments upon the original outlay. It was a question, he said, whether they might not create a privileged class who would hold their dwellings at a low rental by the taxation of the whole community, and that possibly that class might be banded together and use their votes simply to protect themselves. Mr. Fry further deprecated the driving of private and voluntary enterprises out of the field. The housing of the working classes is not quite so simple a matter as some ardent reformers would have us believe.

Hospital for Pontypool.

Pontypool is the centre of a mining population approaching 50,000 in number and is situated in one of the Monmouthshire valleys which is increasing almost as rapidly as some of the Glamorganshire colliery districts. The nearest accident hospital to Pontypool is at Newport, and to this institution patients have to be taken a distance of some 12 or 15 miles, so that it is hardly surprising to find that there is a movement to establish a local cottage hospital. The initial steps were taken several months ago and the promoters have succeeded in obtaining as a free gift a freehold site of two and a half acres. A bequest from the late Mr. Cosslett of Bristol of £1000, with an annual grant of £100, has been secured. Yearly subscriptions amounting to about £700 are promised, while the workmen have agreed to contribute 1*d.* weekly and the colliery proprietors offer another 1*d.* per week for each man employed by them. The scheme is therefore well on the way towards realisation and plans have been prepared for a building with accommodation for 20 beds. Although colliers as a class are somewhat averse to being treated in a hospital—or, perhaps, it would be more correct to say that the collier's wife does not like her husband to go to a hospital—it has been found that this aversion speedily disappears in those localities in which hospitals have been established, and at Aberdare, Mountain Ash, Porth, and Bridgend the accident hospitals are of immense service to the inhabitants.

Refuse Destructor for Taunton.

The corporation of Taunton have led the way in so many municipal enterprises that a refuse destructor might be expected to be already installed in the town. The first step towards the erection of what is considered an essential to the proper equipment of a public health department has now been taken and the Local Government Board have been asked to sanction the expenditure of £4500 upon a destructor to be erected at the sewage works. Taunton was the first municipality in England to establish electric lighting works, and at the present time extensive alterations are going on at the sewage works to adapt the mode of treatment to the septic tank method.

Ambulance Arrangements at the Royal Agricultural Show.

One of the features of the Eisteddfodau which are held in different parts of Wales has of late years been the ambulance competitions and the instruction in first-aid provided in the technical instruction classes organised by several county councils. The Glamorganshire County Council give special encouragement to this subject and every police-constable is expected to obtain a certificate of competency. It appears, however, that at Cardiff, although classes have been held yet no distinct corps has been formed and the ambulance arrangements in connexion with the Royal Agricultural Show to be held in June at Cardiff have therefore been entrusted to 50 men from the Bristol corps.

The Prevention of Tuberculosis.

A largely attended meeting was held at the Weston-super-Mare Assembly Rooms on May 21st, under the auspices of the National Association for the Prevention of Consumption and other Forms of Tuberculosis. The Rev. Prebendary de Salis, rector of Weston, presided, and was supported by the majority of the members of the medical profession in the town and several others, including Colonel Bramble, Captain Phelp, and Mr. J. Cook. Interesting addresses were delivered by Dr. Lionel A. Weatherly (Bath) and Dr. H. S. Ballance (the local honorary secretary). A resolution was unanimously passed recognising the urgent need of a sanatorium for the poorer classes of sufferers from consumption in Gloucester, Somerset, and Wilts, and promising to help forward the scheme by assisting to raise the necessary funds.

Society for the Prevention of Cruelty to Children.

The annual meeting of the Bristol and District branch of this society was held on May 21st. The report stated that 553 complaints of cruelty to children had been investigated; this number was 107 in excess of those for the previous year, the increase being chiefly due to cases of indecent assault, neglect, or starvation. Of the 553 cases 13 were not well founded, in 422 warnings only were issued, in 109 prosecutions were instituted (103 convictions being obtained), and nine were otherwise dealt with. The financial statement was satisfactory.

May 27th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Plague in Scotland.

THE Local Government Board of Scotland have just issued a memorandum with respect to plague in which it is stated that, in view of the possibility of the introduction of plague into Scotland, the Board will assist in the identification of the disease. In suspicious cases on board ship or in the earliest suspected case or cases newly developing in any district the Board have arranged for bacteriological testing, without cost to the local authority, of material from such cases. This material can be received only from the medical officer of health. With the memorandum are sent directions for obtaining and forwarding for bacteriological examination material from suspected plague cases which have been drawn up with the assistance of the Council of the Royal College of Physicians of Edinburgh. The opportunity is also taken in the memorandum of reminding medical officers of health of the peculiar facility given for the importation and dissemination of plague by the circumstance that it affects the lower animals and most especially rats, mice, and by natural sequence cats, and of the inquiries which ought therefore to be made as to evidences of diseases among those animals on board ship and the special importance of measures for their extermination.

Glasgow University.

The programme of the arrangements in connexion with the celebration of the four-hundred-and-fiftieth anniversary of the founding of Glasgow University is fairly well completed and the official proceedings are now practically fixed. On June 12th the ceremonies will be inaugurated by a commemoration service in the Cathedral and in the afternoon of the same day the Right Hon. the Earl of Stair, K.T., the Chancellor, and Principal Storey, the Vice-Chancellor, will hold a reception in the Bute Hall, when the various delegates will be introduced and numerous congratulatory addresses will be presented; the evening will be occupied by the students' gaudeamus and by an "at home" in Queen Margaret College. The forenoon of the 13th is set apart for two orations on famous men formerly connected with the University—the one on James Watt, who did some of his most important work at the old college, by Lord Kelvin, and the other on Adam Smith, who was for a period of 15 years a professor in the University, by Professor William Smart, who is the first occupant of the chair of political economy. Following these orations there will be a graduation ceremony at which numerous honorary degrees will be conferred. On the afternoon of the 13th the new botanical laboratories will be opened by Sir Joseph Hooker, F.R.S., and there will be a garden party in the grounds of Queen Margaret College; in the evening a conversazione will be held in the University buildings at which some 2000 guests are expected. The last day of the ceremonies, June 14th, includes an oration by Professor John Young, M.D., on William Hunter, the founder of the Hunterian museum, a reception of the delegates in the art galleries and exhibition grounds, and in the evening a banquet given by the corporation and a students' ball at the University. For the convenience of delegates and guests several excursions on the Firth of Clyde have been arranged for the day after the close of the official ceremonies. A sketch of the history of the University has been prepared by Mr. Coutts, the assistant clerk of Senate, and, as already announced, "The Book of the Jubilee" has been published

by the Students' Celebration Committee. To this Lord Rosebery, as Lord Rector, contributes "A Foreword"; Principal Storey writes on "The Relation of Civic to Academic Life"; and Mr. Andrew Lang, as an old Glasgow student, contributes an article on "Glasgow in 1864." The poetry includes an ode in Greek by Sir Richard Jebb and an English ode by Sir Lewis Morris. The volume will form a welcome memento of a most interesting academic anniversary.

Glasgow Southern Medical Society.

At a recent meeting of this society it was resolved to send to the General Medical Council a formal statement of facts bearing on the practice of keeping open surgeries for the sale of drugs by medical men; to represent to the Council that this practice is distinctly conserved by the Pharmacy Amendment Act of 1869, and is in no way a breach of the law; and to urge that if an unqualified pharmaceutical assistant engaged in such a surgery and acting in opposition to his employer's instructions sells a scheduled poison this does not involve any illegal action on the part of the proprietor of the surgery. A petition defining the society's position in relation to the question at issue was read and approved.[1]

Glasgow Special Hospitals.

The annual meeting of the Glasgow Ear Hospital was held on May 24th. The medical report revealed a steady increase in the scope and usefulness of the institution. It is gratifying to observe that this increase extends not only to the number of the patients, but also to the clinical instruction given at the hospital. The students in attendance during the year numbered nearly 50 and as the patients' roll is close upon 1700 it is manifest that there are abundant opportunities for practical clinical study. It is proposed to enlarge the hospital by the acquisition of the adjoining property. The Hospital for Skin Diseases has also issued a satisfactory report. The new out-patients during the year numbered 1510 and the in-patients 109. The clinical classes were attended by 72 students and the resources of the hospital are also available for post-graduation study. The Duke of Montrose has consented to become patron of the hospital in succession to the late Duke of Argyll.

Glasgow Small-pox Epidemic.

The favourable reports which continue to be issued show that the outbreak is now practically at an end. A new case is an exceptional event and the number in hospital has fallen to 45. At a meeting of the town council on May 27th the minutes of the Health Committee contained a recommendation, based on the authority of the medical officer of health, that a new small-pox hospital should be erected and that the committee should be authorised to visit and to inspect sites suitable for this purpose. After some discussion this was approved. Some time ago a committee was appointed to consider the question of the re-organisation of the Health Department which, unless rumour is gravely at fault, has not for many months been altogether a happy family. It appears, however, that in consequence of the numerous engagements of the Lord Provost the committee has not yet been called together. An early meeting is now promised.

Tribute to a Paisley Practitioner.

Colonel Sir Thomas Glen-Coats, Bart., commanding the 2nd Volunteer Battalion Argyll and Sutherland Highlanders, has received the following letter from the front:—

Camp, near Vryheid, Transvaal, April 8, 1901.

SIR,—I trust you will excuse my writing to you, but I would like to bring to your notice the excellent work done by Dr. H. C. Donald, of Gauze-street, Paisley, while out in South Africa. He joined my regiment as its medical officer in the beginning of April, 1900, and only left it in the end of November, when he had his leg broken by a horse kicking him. During that time he gained the complete confidence of all his comrades, both officers and men, by his care and his kindness to all our sick and wounded. He shared all our hardships, discomforts, and dangers with us, going into every fight with the regiment which we were engaged in. Not being a professional soldier, it is rather hard to mark one's appreciation of all he did for us in any public way, so I write to you, as commanding officer of his Volunteer battalion, to draw your attention to his good work and let you know how much we all appreciated it, as I feel sure you will be pleased to know of the good work of one of your officers. If you could do anything in the way of promotion for Dr. Donald I am confident of his deserving it fully and all his former comrades in South Africa would be very glad.

I am, Sir, yours faithfully,
H. P. GOUGH,
Major Commanding Gough's Regiment Mounted Infantry.

May 28th.

[1] The text of the petition is published on page 1543.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Cullen Case.

THE case of Mr. J. J. Cullen, the dispensary medical officer for the Castleknock district, including the prolonged legal conflict between the Local Government Board of Ireland and the guardians of the North Dublin Union, has now reached what promises to be its penultimate phase. At a meeting of the guardians held on May 22nd the chairman disclosed the result of an interview which took place recently between a deputation of the guardians and the Local Government Board in reference to Mr. Cullen. The terms agreed upon were that Mr. Cullen should resign and that no salary should be paid to him for the 12 months intervening between the issue of the sealed order and the present time; that a locum-tenent should be appointed for one month; and that an election of a medical officer should take place at the end of that period, the Local Government Board agreeing to sanction the appointment of Mr. Cullen if he should again be elected. A motion approving of these terms was adopted by 25 votes to seven.

The Death-rates of Dublin and Belfast.

Sir Charles Cameron has recently addressed an interesting letter to the Dublin daily papers in which he calls attention to the results of the census just published, which show that the population of Dublin was considerably under-estimated, while that of Belfast was over-estimated. The recent death-rates, being calculated on those assumed populations, showed Dublin in a more unfavourable, and Belfast in a more favourable, light than would have been the case were the actual numbers of the population known. Sir Charles Cameron observes that as Belfast has no township and corresponds practically to the Dublin metropolitan area the population of the latter still exceeds that of the former by 25,935.

Royal College of Surgeons in Ireland.

No less than 10 new candidates have offered themselves for election on the Council of the Royal College of Surgeons in Ireland at the ballot which will take place on June 3rd.

Cottage Hospital for Larne.

Mr. Hugh H. Smiley of Larne has handed over to trustees the sum of £5000 to build and to endow a cottage hospital for Larne. These trustees have the entire responsibility of selecting a site, erecting the building, and arranging details as to management and terms of admission.

The Midwife Question at Caledon.

Dr. C. J. Clibborn (Local Government Board medical inspector) held a sworn inquiry at the Court-house, Caledon, co. Tyrone, last week in reference to the death of a woman at Cronghill, Caledon, on March 30th last, on whose body an inquest was held, when the jury found that "they attached no blame to the midwife, who had done all she could for the deceased according to her knowledge, and unanimously condemned Dr. Patterson for neglect of duty." A public meeting was held in Caledon to protest against the verdict and the Local Government Board of Ireland was requested to hold an inquiry. From the evidence it appeared that the husband of the deceased came for the medical man, Mr. R. D. Patterson, on March 29th, and although he had no "line" the medical man walked a mile to see the woman. On arrival he found only a little girl, 10 years of age, with the woman who was in an office house, made temporarily habitable, and with no fire. She was suffering from puerperal septicæmia and was in a dying condition, with a temperature of 102° F. and a pulse-rate of 120. The entire surroundings were filthy and the woman's clothes had not been changed nor had she been cleaned. The medical man said to the husband that his wife's condition was hopeless and that he would hold them all responsible. He gave medicines to ease the poor woman's pain. The midwife admitted that she had not changed any of the clothes from the date of the confinement (March 24th) until the death of the woman on the 30th. When asked why a medical man was not sent for sooner she said that that was for the friends to do, not for her. She admitted that there was singing and drinking in the house on the night of the birth and on the following night. The husband said that he had left all to the woman who had attended his wife. It would appear also that the priest

had been sent for to administer the last rites of the Church before the medical man was sent for. The decision of the Local Government Board will be given after some time.

The Water-supply of Belfast.

Owing to the long-continued dry weather the reservoirs are down five feet six inches below the high-water level. The water commissioners, with the view of obtaining a temporary supply of water from the new Mourne scheme, have ordered the construction of a short temporary diversion channel in the Annalong valley to divert the water of the river into the pipes connected with the main conduit, as it will be impossible to have the permanent weir and other works completed in time to afford any relief during the present season. This temporary arrangement will be effected in a few weeks.

The Royal University Commission.

The report prevalent in Ireland for some time that the Government were finding great difficulties in the selection of men willing to act on the Royal University Commission has been confirmed by the statement which was made by Mr. A. J. Balfour in the House of Commons on May 24th, in reply to an inquiry by Mr. T. Healy, M.P. Mr. Balfour was unable to give the names of the Commissioners. One of the reasons for the delay, he said, was the large number of Commissioners—Englishmen and Scotsmen—who have been asked to serve. People engaged in education could not take evidence in Ireland after the beginning of an academic term. Another delay arises from the circumstance that an invitation is sent to a gentleman and he finds that he is not able to attend and then the invitation is sent to someone else. In these circumstances, said Mr. Balfour, delays are inevitable. The truth seems to be that the question is such a thorny one that few care to accept the position of Commissioner, as no matter what recommendations may be made as the result of the sittings of the Commission the most adverse criticism will come from one or other quarter in Ireland.

The Removal of Lunatics.

Mr. E. S. Finnegan, the coroner for the city of Belfast, appeared before the Poor-law guardians of that city on May 21st, and having given illustrations of the present barbarous plan of removing lunatics suggested for their approval the following method. Suppose a person was noticed to be of unsound mind, a relative or friend could go to the relieving officer of the district who would fill in a form provided for the purpose and direct the friend to get a medical man (if he could pay his fee, or, if not, a dispensary medical officer) to meet at the lunatic's house at some specified time. If the medical man, after examination, was satisfied that insanity existed a magistrate was to be found and brought to the house. A legal court would then be formed and the medical man in the presence of the magistrate, could sign the certificate in the prescribed form. The magistrate would then sign his certificate for the transfer of the patient, not to the workhouse but to the district lunatic asylum. The patient was then to be taken to the asylum by a friend in a cab, and the resident medical superintendent had told him (the coroner) that he would admit every patient in whose case the various steps in the plan he had suggested had been carried out. The coroner was thanked for his remarks. It would appear that there are two methods by which patients in Ireland are admitted to public asylums. The friends finding a relative insane go to the asylum and procure a "house" form and get a medical man to fill it up. But to do this he must state certain symptoms of insanity that he has personally noticed. In the case of dispensary patients, to save time and any risk of being blamed, the dispensary medical officer often sends the patient to the workhouse as a kind of half-way house, where there is plenty of time to investigate fully the question of insanity, and afterwards the patient can be transferred to the asylum. But there is another method—a most barbarous plan—by which, it is said, three-fourths of the lunatics in Ireland are committed. Suppose a man shows signs of being a "dangerous lunatic," a relative makes a sworn information that he proposed to commit "an indictable crime." The police, acting on this affidavit, arrest the lunatic (often he is handcuffed, sometimes tied on a car) and drive him to a petty sessions or police-court, where before two magistrates he is charged and committed as a common criminal with the stamp of a criminal on him for all time, even if he recovers. The magistrates then give an order for his admission to the nearest asylum. It is reported that neither in Great Britain nor in any other country do such an absurdly cruel and barbarous law and system prevail, and it is to replace this method that the Belfast coroner has suggested an alternative and more humane scheme.

Down District Asylum.

Mr. M. J. Nolan, the resident medical superintendent, in his annual report, records that 500 cases were under his charge in the year ended Dec. 31st, 1900, for physical ailments, which gives a fair idea of the extent to which bodily disease is associated with mental disorder. A large proportion of the cases came from workhouses, often only when the decay and degradation of years required all the resources of an asylum. In the meantime the entire burden of their cost of maintenance has been thrown on the union districts and the country at large has been deprived of the Treasury contribution of 4*s.* per week per head, since for want of due certification as lunatics they were denied the advantages of legal recognition. Recent legislation was provided for such long-delayed recognition by the proposed establishment of auxiliary asylums, either as separate establishments or as departments of existing asylums, but the grant in such cases will be but 2*s.* per week per head. It is difficult to see why such a reduction should be made, as surely it is very often patients of this class who so largely tax the nursing staff and equipment of the asylum hospitals. There is something anomalous in the legislative philanthropy which doles out to the chronic harmless lunatic but a moiety of the State support granted to his more fortunate but dangerous brother.

May 28th.

PARIS.

(FROM OUR OWN CORRESPONDENT.

Election of Dr. Laveran to the French Institute.

AT the Institute (Academy of Sciences) the election of a member in the section of medicine to succeed the late Professor Potain took place on May 20th. This election has given rise to very active wire-pulling in medical circles. The candidates were numerous and all of them were distinguished, the list being M. Charles Richet, M. Cornil, M. Laveran, M. Jaccoud, M. Lancereaux, M. Fournier, and M. Charrin. M. Charrin was chiefly supported by M. Bouchard, who is all-powerful in the Section of Medicine in the Academy of Sciences; he was, in fact, placed first on the list which the section draws up in accordance with custom before the whole Academy proceeds to vote. M. Richet had the support of the old friends of his late father who was a member of the Institute. M. Laveran was supported by the members and friends of the Pasteur Institute; he came out at the head of the poll in the third voting after a very animated contest. M. Laveran discovered the hæmatozoon of malaria, and his name has so often figured in the pages of THE LANCET that it would be superfluous to give details of his career. It may be mentioned, however, that the greater part of his life has been spent as an army surgeon, and that notwithstanding his success as a *savant*—for he was professor at the École de Santé Militaire du Val de Grâce and a Member of the Academy of Medicine—his rise in military rank was surrounded with difficulties on account of the jealousy of his official superiors. On his becoming a Member of the Academy of Medicine he was ordered to leave Paris and was appointed medical officer of the hospital in Lille. He thereupon resigned his position in the army and quitted the service to join the Pasteur Institute.

"*Kleptomania.*"

A Paris medical man practising as a specialist in mental diseases has just been the victim of a heartless trick which is not without its humorous side. One day he was consulted by a man of very distinguished appearance and giving a very aristocratic name, who said: "Doctor, I have come to ask you to cure my daughter of a terrible affliction. She is a kleptomaniac and because of this we are heart-broken. I have brought her with me and she is here in the next room." The girl was then shown in and the medical man commenced treatment by means of suggestion which required several attendances. From the first, under the influence of her hysterical mania she every time carried away from the practitioner's consulting-room some small object which the father

sent back next morning. The medical man ordered his servants not to pay attention to these eccentricities of the patient who, it was thought, would soon be cured, but one day she carried off a jewel-box of great value taken from an adjoining room into which she had been shown. The owner was not anxious at first, but the missing article was not returned the next day as the others had been, and the girl never came back. At last he sent to the address given by the aristocratic personage and then found that the address was false, and that he had been victimised by two rogues of exceptional craftiness.

A Proposed Leper Asylum.

At the meeting of the Academy of Medicine held on May 21st M. Besnier read a report on the proposal to establish a sanatorium for lepers in the commune of Ronceux (Vosges). This proposal, originated by M. Santon, has given rise to much opposition in the neighbourhood and the Academy had been requested by the Conseil d'État to advise upon the question. Provided, said the report, that sufficient hygienic precautions are taken, the risk of the spread of leprosy is far from being so great as seems to be supposed. Some of the Paris hospitals—the Hôpital St. Louis for instance—contain lepers, but extension of the disease has never been observed. There still are in France a few foci of leprosy not quite extinct; if a leper asylum were founded it ought to be in the neighbourhood of these foci of leprosy—on the Mediterranean coast for instance. From the humanitarian point of view it would be very useful; a leper asylum would render great services to patients who had contracted leprosy abroad. It ought to be a free sanatorium. A leper asylum does not form a danger to the neighbourhood, since if sufficient precautions are taken there is hardly any prospect of the disease spreading. Foreign authorities on leprosy do not think that the dangers of contagion are very formidable. Hansen states that at Bergen in Norway lepers move about freely beyond the limits of the asylum without extending the disease. At Christiania, a part of the country where leprosy rages, the disease does not occur in the vicinity of the leper asylums. The sanatorium established in Prussia has not given rise to any inconvenience. Dr. Ehlers of Copenhagen is of opinion that leper asylums may disseminate the disease to some extent; they ought, therefore, not to be placed in districts free from leprosy. César Bnuck also thinks that a leper asylum may be a source of danger. The committee advised the Academy to reply as follows to the questions put by the Minister of the Interior: 1. Under the conditions and with the reservations detailed in the report the Academy is of opinion that if placed as near as possible to a region where some lepers still exist a sanatorium for lepers would be of great utility. 2. Under the conditions and with the reservations aforesaid, if in a well-chosen and isolated situation, worked under strict regulations laid down by the sanitary authority and subjected to constant and effective supervision by the sanitary authority both within and without, a leper asylum ought not in the present state of knowledge to be a source of danger to the public health. 3 As the present state of the law in France does not render this supervision possible a committee nominated by the Academy would decide on the measures which ought to be taken in this respect. The conclusions arrived at in M. Besnier's report will be discussed at the next meeting of the Academy.

May 27th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Vegetarianism.

IN the Berlin Medical Society a lengthy debate arose lately on a paper read by Dr. Albu on Vegetarianism. He said that it must be ascertained (1) whether a person was able to live on a purely vegetarian diet and (2) whether this diet was advisable. As to the first question he alluded to the observations of Professor Voit and Dr. Rumpf who found by experiments on two men, aged 28 and 19 years respectively, that in both there was nitrogenous equilibrium. He had himself investigated the phenomena of metabolism in a lady living for the last six years on a strictly vegetarian diet and whose health was perfect. The research was continued over five days, the food consisting exclusively of bread, fruits, nuts, and salad, and the result was that the nitrogen assimilated during this period showed an increase. An exclusively vegetarian diet was therefore a practical possibility. Dr. Albu, however, said that in his opinion this diet was not advisable for healthy persons, because vegetable albumin was not so easily absorbed as animal albumin, and because a vegetable diet was too bulky and too monotonous. For invalids a vegetarian diet might, however, sometimes be in every way advantageous, not, however, in its strictest form, but combined with milk. The conditions in which such a diet was indicated were: (1) neuroses and neurasthenia; (2) nervous diseases of the gastro-intestinal canal, but only for periods of from six to eight days duration; (3) chronic constipation; (4) general obesity; (5) gout; (6) neurosis of the heart and Graves's disease; and (7) Bright's disease. Contra-indications were afforded by all diseases of the gastro-intestinal canal and cardiac failure. Some persons had a marked idiosyncrasy the effect of which was that vegetables disagreed with them. The drawbacks of vegetarianism had been exaggerated by its adversaries. Dr. Albu had never observed either gastrectasia or dyspepsia or any other undesirable symptom.—In the discussion Professor Rosenheim said that although certain persons, such as peasants accustomed to it from their youth, might live on a strictly vegetarian diet it would be a different thing suddenly to change the food of a man who had been a meat-eater all his life. In these cases he had observed that the patients felt ill, and therefore when prescribing a vegetarian diet he had always for a long time recommended the addition of butter, milk, and eggs. In neurasthenia, gastric ulcer, and carcinoma this "lacto-vegetarian" diet proved valuable.—Dr. Schönstadt made a reference to the researches of M. Hofmann and Professor Rubner, the former of whom observed general debility and the latter gastro-intestinal troubles as sequelæ of vegetarian diet. Vegetable albumin was of course not easily absorbed. To get the necessary daily amount of albumin from bread not less than 1740 grammes must be eaten. He mentioned that in the beginning of last century prisoners received an exclusively vegetarian diet, the result being an enormous morbidity and mortality, but as soon as mixed food was given the state of health in the prisons became normal. It was a mistake to suppose that there were nations which lived on an exclusively vegetarian diet, for they all took some animal food in addition to articles of vegetable origin.—Professor Fürbringer was of opinion that the instances in which vegetarians had beaten the record in athletic performances must be regarded as exceptions. He had never prescribed a strictly vegetarian, but always a lacto-vegetarian, diet, especially in sexual neurasthenia when too much animal food had been previously taken. In Bright's disease and in general obesity this diet was advisable; in gout, however, its utility was still doubtful. The human species belonged neither to the carnivora nor to the herbivora but to the omnivora.—Dr. Arthur Meyer said that he had lived as a vegetarian for a fortnight *experimenti causa* and his weight increased by 1·5 kilogrammes (three pounds and a quarter) during that time.—Dr. Hauchecorne gave interesting details with regard to vegetable-feeders among the lower animals. He said that there were but few herbivorous animals, the majority being omnivorous. It was erroneous to suppose that for the lower animals flesh was the most suitable food in hot climates and vegetable products in cold climates. Herbivorous animals were, as a rule, not so intelligent as the carnivorous and the assertion that they were naturally of a quiet disposition was a mere fable.—Dr. Albu, in replying, recommended the lacto-vegetarian diet for certain diseases.

May 27th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Diversion of Blood from the Portal Circulation by Surgical Means.

AT a recent meeting of the Medico-Chirurgical Society of Bologna Professor Schiassi reported three cases in which he had diverted blood from the portal into the general circulation in order to relieve hepatic engorgement and the ascites dependent upon it. The operation consisted in grafting the omentum or mesentery between the peritoneum and the abdominal muscles so as to establish anastomotic communication between their respective vessels. By this means

excessive intravenous pressure in the portal system is relieved and it is thought also that a smaller amount of noxious matter finds its way to an over-worked liver. Surgical interference Professor Schiassi considers to be indicated (1) in cases of passive hepatic congestion when ascites is beginning; (2) in cases of capsular cirrhosis before the growth of connective tissue has involved and damaged the liver cells; (3) in portal phlebitis; and possibly (4) in certain forms of biliary cirrhosis. In each of Professor Schiassi's three cases there was cirrhosis with ascites, and the result of the operation was immediately successful, except in one case where a second grafting was required to supplement the first.

Anti-malaria Campaign.

The Italian Red Cross Society have succeeded in collecting by voluntary subscription the greater part of the sum necessary for renewing the summer campaign against malaria in the Agro Romano. Some 5000 lire are still needed to make the scheme practicable, and an appeal for funds is being made to the Government by the society and others interested in the undertaking.

The Use of Glycerine in the Preservation of Vaccine Virus.

In the report of THE LANCET Commission on Glycerinated Calf Vaccine Lymph[1] it was stated that the discovery of the value of glycerine for the preservation of vaccine virus was due to Copeman, Chambon, and Saint Yves-Menard. According to Rossi Doria[2] this honour belongs to Professor Leoni, formerly director of the Vaccine Institute of Rome, who was the first to demonstrate that vaccine virus in the fresh state is contaminated by germs, among the most important of which are those of pus, and that these germs disappear in the lymph when it has been preserved in glycerine for a time—from three to four weeks—under certain conditions of temperature. It is stated that the experiments determining this important fact were made by Leoni in 1889 and were published by him in the *Rivista d'Igiene e Sanità Pubblica*, and that Copeman's work dated from 1892 and that of Chambon and Saint Yves-Menard from 1893.

Congress of "Medici Condotti."

The second congress of "Medici Condotti" (district doctors) was held in Rome on May 5 h and the three succeeding days for the purpose of agitating for reforms in the conditions under which that hard-working but ill-paid class of medical men are now discharging their onerous duties. It is two years since the first congress of the same kind sat at Como, and little or nothing has as yet been done towards ameliorating or removing their many grievances. Of these there are especially two about which the loudest complaints are made—viz., the insecurity in the tenure of the office of the "medico condotto," and the power possessed by the communal councils of cutting down his salary at their discretion. Resolutions were passed to the effect that after the lapse of the three years of probation prescribed by law for the newly appointed candidate he should be secure in his post, and that during the period of probation as well as afterwards the communal councils should not have the right of dismissing him except for some sufficient cause and with the consent of the Provincial Sanitary Council. Further, the salary of the "*medico condotto*," once fixed, should not be subject to reduction. It was also resolved that a month's vacation ought to be granted to him yearly, that a reduction should be allowed in his railway fares, and that after 25 years' service a pension should be granted to him without its being required that he should resign his appointment.

The Controversy between Professor Grassi and Major Ronald Ross.

The last issue of the Policlinico[3] contains the close of the polemic between Major Ross and Professor Grassi on the question of priority in the discovery of the extra-corporeal life cycle of the malarial parasite. The controversy would appear to hinge upon a doubt as to whether or not a general statement admittedly made by Major Ross in the preface to the paper in which he first announced his success in cultivating malarial crescents in the mosquito applied to the particular insects in which he first observed the development of the pigmented bodies to take place. To any impartial reader it will not appear in the least doubtful that the two specimens upon the fate of which so much scientific progress was to depend were really reared from the larvæ by Major Ross and had never been given the chance of disqualifying themselves for experimental purposes by indiscriminate draughts of forbidden blood. Professor Grassi, however, insists that a special statement to this effect should have been made by Major Ross, and he takes advantage of an admission by the latter in a private letter to Dr. Charles to show that Major Ross himself is of the same opinion! But the criticism, even if it were justified by Major Ross's inadvertence, is a carping and unworthy one at this time of day when subsequent investigations have made it so clear that the bodies observed by him had without question the origin and nature which he claimed for them. Fortunately for the discoverer no criticism can now rob him of the well-earned distinction of having been the first to find the road to the solution of the problem, although many, including Professor Grassi himself, may share with him the honour of supplementing and completing it.

May 24th.

[1] THE LANCET, April 28th, 1900, p. 1227.
[2] Policlinico, Sezione Pratica, Anno vii., fasc. 5.
[3] Il Policlinico, N. 37, 1901, Sezione Medica, fasc. 6.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Withdrawal of the Anti-Christian Science Bill.

THE Bell Bill which was drawn up and introduced into the State Legislature of New York for the purpose of placing Christian Scientists, osteopaths, and others who might be practising the healing art without being legally qualified to do so under the same restrictions as all who desire to follow the medical profession in New York State was overwhelmed by an avalanche of amendments which would have rendered its action as intended by its original promoters abortive. The Bill was consequently withdrawn, which under the circumstances was the best thing that could have happened. The amendments were found to be necessary for the passage of the measure on account of the strong opposition brought against it in its original form. The result of this failure to restrain the quack element in New York State has proved beyond doubt that public sentiment is not favourable to restrictive Medical Acts and the numerous hearings given to the Bill, coupled with the sensational newspaper reports, have certainly helped, rather than hurt, the cause of the Christian Scientists and other divisions of what may be termed the illegitimate medical fraternity. The controversy over the Bill has raised in the minds of members of the legitimate medical profession grave doubts as to whether it is wise to control Christian Scientists and the rest by legal means. Agitation seems to strengthen their position; they are regarded somewhat in the light of martyrs and medical men are esteemed as would-be persecutors. Another reason, perhaps the most potent and one which has not been mentioned in American journals, is that the Christian Scientists owe much of their wide-spread influence to women, and women are a mighty power in the United States. Possibly the course dictated by the soundest common-sense would be to ignore these fads, except when their professors and followers contravene the law in a too flagrant manner.

Isolation of Consumptive Convicts in Texas.

Texas, which is usually looked upon as one of the most backward States in the Union as regards matters pertaining to advanced civilisation, has recently made a forward movement which should put to shame many of those States which claim to be in the front rank of progress. The treatment of convicts in various parts of the United States has long been the subject of adverse criticism, and the custom of allowing criminals afflicted with tuberculosis to mix freely with, and even to sleep in the same compartments as, healthy prisoners has been frequently denounced in medical journals in this country. The fact that Texas has isolated its consumptive convicts is not generally known, but the authorities have even gone further than this, for its sick convicts receive practically the same treatment as that followed in the ordinary sanatoria for consumptives. They are fed on nourishing food and are given stimulants when necessary. Cleanliness and sanitary precautions are strictly enforced. If not confined to bed the men are required to live entirely in the open air and to sleep in a large stockade where, it is needless to remark, each enjoys an

ample sufficiency of pure air. Each one works according to his strength and the employment is wholly restricted to market gardening; nevertheless, this isolated convict settlement has returned to the State in two years a net profit of about $2500 (£500). The example set by Texas is one to be copied.

Care of the Foundlings in New York.

The New York County Visiting Committee of the State Charities Aid Association have just issued their annual report dealing with the conduct of the various charitable institutions under their supervision. The most satisfactory item of news in this publication is that showing the improved methods now in force for the rearing of foundling infants. Only a few years ago the management of the Infants' Hospital on Randall's Island was a public scandal. The report published by the committee in December, 1897, stated that of 366 infants under the age of six months admitted to the hospital during the year 1896 only 12 were alive on April 15th, 1897—a death-rate of 96⅞ per cent. This condition of affairs aroused public indignation and sentiment, and philanthropists came forward with money and plans to endeavour to devise methods whereby these unfortunate infants might have a fair chance to live. The fact was recognised that so long as the infants were massed together in one building and fed to a great extent by artificial means the mortality amongst them must necessarily be very large. The State Charities Aid Association then suggested that the foundlings should be removed as soon as possible after their reception at the Infants' Hospital to carefully selected families in the country, and that when the children became healthy and strong homes should be provided for them by adoption. This placing out system has been practised successfully for a considerable time in Massachusetts and Pennsylvania. The Association for Improving the Condition of the Poor joined with the State Charities Aid Association in this Samaritan endeavour and the joint committee approached the Commissioner of Charities for the boroughs of Manhattan and the Broux with a proposal offering to transfer a certain proportion of the foundlings to boarding-houses in the country. The Commissioner gladly welcomed the offer, stipulating that the committee were to meet all expenses and that the number under their care should not exceed 25 at any one time. The work was begun in April, 1898, and the results have been most encouraging, the mortality-rate having fallen from 55·9 per cent. in 1899 to 18·9 per cent. in the year ending March, 1901. The committee have also been equally successful in providing permanent homes for the children by adoption. Other public authorities in Greater New York were so impressed by the success of the experiment that the Commissioner of Public Charities for the boroughs of Brooklyn and Queens in 1900 requested the committee to perform the same service for the foundlings coming under his charge. This request was granted under certain conditions. In December, 1900, the Commissioner for Manhattan and the Broux, finding that the system had more than realised the expectations of its promoters, asked the committee to take charge of all foundlings coming under his care who had been baptised in the Protestant faith, having up to that time limited the number to 25. The Roman Catholics have now formed a guild—the Guild of the Infant Saviour—and they will follow the plan pursued with such beneficial results by the Protestants. Both agencies will receive the foundlings directly from Bellevue Hospital, to which institution they are first taken, thus obviating the transfer from Bellevue to the Infants' Hospital and thence to the country, except in instances in which special medical treatment in the hospital is desirable. It may be said that the foundlings who since January have been taken directly to the country are all alive at present. The fact has been demonstrated so thoroughly and with such frightful effects that many foundling hospitals, however carefully managed, are nothing more or less than death-traps for infants, that it is to be sincerely hoped that the example of New York may be widely followed and that the wholesale "massacre of the innocents" may thus be stayed.

Sanatorium for Indigent Women and Children Suffering from Tuberculosis in New York State.

The method of treating consumption, especially in its incipient stages, by allowing its victims plenty of fresh air and wholesome food has been shown to be the only effective and rational means of checking the spread of the disease. In every civilised country of the world sanatoria for those suffering from tuberculosis are springing up on all sides. There is, however, a class of people who, though living under conditions peculiarly favourable to contracting and disseminating the malady, are by reason of their poverty unable to escape these conditions. The class referred to comprises working girls and poor young married women and children suffering from tuberculosis. A pressing need of the times is the establishment of sanatoria for such as these. It must be ever borne in mind that not only should the consumptive poor be treated for their own sakes and upon general charitable principles, but also as a precaution against spreading contagion. Tuberculosis will never be stamped out while means of contracting and propagating the malady exist as they do at present amongst the poor. Recognising this truth in New York a committee of women has been formed for the purpose of founding an institution for the class referred to above, and the project has prospered beyond the best hopes of its founders. It is now three months since the organisation was formed and already more than $30,000 (£6000) have been subscribed. The work, however, cannot be begun in a practical manner until $100,000 (£20,000) have been obtained, and this sum must be forthcoming by June 1st if arrangements are to be made this summer to receive patients. Tuberculosis is very prevalent in New York State and there was an increase in 1899 of 300 deaths from the disease over the year preceding. In 1900 10,000 cases were reported to the New York Medical Board of Health and it is estimated that there are at the present time in New York City alone 30,000 cases. The proposed sanatorium at Stony Wolde will be non-sectarian and the medical board under whose control it will be managed is composed of physicians of the highest standing in New York and Albany. Among the members of the committee is Mrs. George H. Shrady, the wife of the editor of the *Medical Record*.

May 22nd.

Obituary.

JOHN DAVID WILLIAMS, M.D., C.M., B.Sc. (PUB. H.) EDIN.

THE death of Dr. J. D. Williams is pathetic in the extreme. By sheer hard work and by his scrupulous attention to matters of detail he had managed to secure the confidence of the general practitioners within a considerable distance of Cardiff and although still under 40 years of age he had established for himself a reputation as an operator and accurate diagnostician which many older men might well have envied. Born in the Isle of Anglesey in the year 1864 he became at the age of 16 years the pupil of Dr. Griffith R. Griffith of Carnarvon. At 18 years of age he entered the University of Edinburgh and graduated M.B. and C.M. in 1888, obtaining the Freeland Barbour scholarship. For a short time he was demonstrator of anatomy at the Edinburgh School of Medicine. In 1892 he took the public health degree of B.Sc. and for a time his inclination turned to the special science of preventive medicine, but his tastes were evidently in the direction of gynæcology, for in 1890 he was awarded the University gold medal for his M.D. thesis upon the pathology of the female generative organs. After leaving Edinburgh he was in practice for three years at Dowlais, near Merthyr, but his health broke down and he went to Cardiff with the intention of devoting himself exclusively to gynæcological work. His first public appointment was in 1896 upon the consulting staff of the Cottage Hospital which had just been established by the exertions of Mr. Henry Naunton Davies at Porth. In the following year he was elected upon the staff of the Cardiff Provident Dispensary and of the Cardiff Infirmary, a special ward being allotted him at the latter institution, though, unfortunately, through lack of funds, the original number of beds have latterly been sadly lessened. As evidence not only of the need for this special department but of the success which has attended Dr. Williams's labours it is sufficient to say that more than 60 patients are at the present time awaiting admission to the gynæcological ward of the infirmary. He was an enthusiastic Freemason and in 1896 was one of the founders of the Prince Llewellyn Lodge at Cardiff. At the time of his death he was junior warden of the lodge

and but for his illness would have been invested senior warden and next year would doubtless have occupied the chair. The history of his fatal illness is unhappily but a repetition of that of many others. At Easter he visited Rome and, though usually peculiarly careful in such matters, he drank some water from a well near the city and soon after returning to Cardiff he developed typhoid fever. Although apparently doing well on May 17th haemorrhage occurred and he died on the morning of the 21st. He was buried on the 24th in the picturesque churchyard of the village of St. Fagan's, the seat of Lord Windsor, the funeral being attended by practically every member of the medical profession in Cardiff and by many from the surrounding district. Never before was there such a gathering of Cardiff practitioners. Many of the brethren from the Prince Llewellyn Lodge and other lodges were also present. Of Dr. Williams's personality it is difficult to speak in terms that will not seem exaggerated. Although exceptionally quiet and undemonstrative he had the faculty of securing the confidence both of the colleague to whose assistance he was called and of the patient for whose welfare they were jointly solicitous. Outside his profession he had a charm peculiarly his own, and the social life of Cardiff has sustained through his untimely death a very grievous loss.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The following degrees in Medicine and Surgery were conferred on May 23rd:—

Master of Surgery.—W. D. Harmer, King's.
Bachelor of Medicine.—H. Edmondson, Clare; K. R. Crompton, Caius; and A. R. Taylor, Downing.
Bachelor of Surgery.—A. R. M. Brenan, Trinity; K. R. Crompton, Caius; and A. R. Taylor, Downing.

A sum of £21,500 from the Benefaction Fund has been appropriated to the erection of the new Medical School buildings, including the Humphry Museum.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—FELLOWSHIP EXAMINATION.—The following candidates having passed the necessary examination have been admitted Fellows of the College:—

Mr. A. G. Beale, Mr. M. F. Cahill, Mr. E. F. Frazer, Miss G. H. Giffen, Mr. R. J. A. Haynes, Mr. R. M. Hugo, Mr. J. J. H. Jackman, Captain S. J. C. Pritzie-Perry, Mr. W. Smartt, Mr. A. W. Tabuteau, Mr. G. T. Whyte, and Mr. R. B. Wright.

The following candidates have passed the primary part of the Fellowship examination:—

Mr. A. R. Boyd, Mr. R. W. Burkitt, Mr. K. Fleury, Mr. J. J. McConnell, and Mr. S. S. Pringle.

THE SOUTH AFRICAN CIVIL SURGEONS' DINNER.—We are asked to announce that at the dinner which is to be held at the Hotel Cecil next Wednesday, June 5th, at 7.30 for 8 P.M., a few seats will be reserved for those who have been unable to notify their intention of attending. Tickets will be paid for on the stairs. No seats will be reserved beforehand except those at the high table, but seats may be retained on arrival by filling in the blank card to be found in each place. Applications have already been received for over 130 dinner tickets.

THE ASSOCIATION OF ASYLUM WORKERS.—Sir J. Crichton-Browne presided on May 24th at the annual meeting of the members of the Association of Asylum Workers in the rooms of the Medical Society, Chandos-street, W. The chairman stated that there was a slight diminution in the number of members (from 3006 to 2868), due to the absence of Army reservists serving their country in South Africa. It was most satisfactory to note that the colonies were coming into line with them. With respect to the possibility of lunacy legislation he thought that having regard to the advanced stage of the session and the state of public business the prospect was sadly remote. No opposed Bill would stand a chance of passing, while no measure would be approved that did not deal adequately with the pension question. Asylum workers, he said, were of a much more nervous class that they used to be, though the standard of work was higher. Their work was honestly performed, without the prospect of the Victoria Cross, a testimonial, and a dinner. It was not, however, without its compensating benefits, because while they were earning their livelihood they were doing good Christian work which proved a blessing to the inmates. Much, however, remained to be done in the diligent treatment of chronic cases, and he urged them never to regard any case as irretrievably hopeless. Dr. Robert Jones seconded the adoption of the report, which was agreed to, and on the motion of Dr. Sidney Coupland, seconded by Miss Honnor Morten, the balance-sheet was adopted. Sir J. Crichton-Browne was re-elected president for the ensuing year.

MR. JOHN DUNSTAN, M.R.C.V.S., of St. Mellion, Cornwall, has been appointed professor of surgery and materia medica at the Royal (Dick) Veterinary College, Edinburgh, vacant by the resignation of Professor Whitecross. Mr. Dunstan is a member of a Cornish family who for six generations have practised veterinary surgery and he has for several years acted as honorary secretary of the Western Counties Veterinary Medical Association.

INFANT MORTALITY IN NORTH DEVON.—An inquest was held at Ilfracombe on May 21st by the deputy coroner (Dr. E. J. Slade-King) upon an illegitimate child, aged eight weeks. The evidence showed that the mother, who had been recently discharged from the Barnstaple Workhouse, had fed the deceased upon milk, bread, and biscuits, and a verdict of "Death from improper feeding" was returned. Dr. Slade-King stated that the mortality of illegitimate children in the Barnstaple district during the past year was 50 per cent. of those under one year of age, and the medical men of Ilfracombe had therefore decided not to give certificates of death in such cases.

ROYAL MEDICAL BENEVOLENT COLLEGE.—At the annual general meeting held on Wednesday last at the office of the college in Soho-square, the following candidates for pensionerships and foundation scholarships were reported by the scrutineers, Dr. Baines, Dr. Felce, and Dr. Galton, to have obtained the largest number of votes and were declared to have been duly elected:—

PENSIONERSHIPS.

1. Miss F. Chapman ...	10,238	3. Miss Bull	7141
2. Fanny A. Coleman ...	8713	4. Charlotte R. Davies ...	6616

FOUNDATION SCHOLARSHIPS.

1. G. A. L. Anderson ...	10,939	5. G. W. Adams	6189
2. C. A. Mallam	9475	6. T. G. M. Clarke ...	6162
3. A. R. Hemsted... ...	6897	7. D. A. Buchan	5427
4. W. Bourne...	6644		

ANNUAL MEETING OF THE BRITISH MEDICAL TEMPERANCE ASSOCIATION.—The twenty-fifth annual meeting of this association was held at the Temperance Hospital on May 21st. In the unavoidable absence of the President, Professor G. Sims Woodhead, the chair was taken by Major G. K. Poole, M.D.—The report showed an addition during the year of 28 new members and 92 new student associates, and a total of 495 members, 584 medical students, and four lay associates.—Dr. T. Morton, the treasurer, presented the balance-sheet, showing an income of £107 but closing with an adverse balance of £26.—After the business had been concluded a paper was read by Dr. J. J. Ridge on the Temperance Question as affected by Modern Experiments. He contended that these showed that alcohol was not a true food since even though some was used up in the body its action on the various tissues showed that it was not harmless as food ought to be in any reasonable quantity. It had been proved to be deleterious even in moderate quantities by Kraepelin, Fürer, and others. —A discussion ensued in which Major Poole, Dr. S. Andrews (Basingstoke), Dr. T. Rushbrooke, Mr. W. F. Hazel, and others took part, and the following motion was moved by Mr. F. Churchill, seconded by Dr. R. Paramore, and carried unanimously: "That the leaders of the profession and teachers in our medical schools be requested to urge the students attending their lectures to point out hereafter to their patients the dangers of the habitual use of alcoholic liquors."—A new departure was made by agreeing to admit as subscribers any persons (whether abstainers or not) who desire to assist the association in this way to promote the cause of temperance. Subscriptions should be sent to the honorary secretary, Dr. J. J. Ridge, Enfield, Middlesex.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, MAY 23RD.

Disease among the Troops in South Africa.

SIR WALTER FOSTER asked the Secretary of State for War if he could state the number of cases of typhoid fever and the number of deaths among the forces in South Africa during the month of April, and also the number of cases of plague and the number of deaths from that disease, up to the latest advices, among the soldiers and others engaged in the campaign.—Mr. BRODRICK replied: The returns for April received only take up to the 19th; there had been then 1052 admissions for enteric fever and 140 deaths. The numbers of cases of plague have, according to latest advices, been as follows—viz., 14 soldiers, 20 native drivers, and eight other employés; of seven deaths reported none are stated to have occurred among soldiers.—Dr. FARQUHARSON asked the Secretary of State for War whether he could state the number of sick in the 2nd Worcesters at Bloemfontein between April 4th and 27th, 1900, what were the total of enteric fever cases, and what the ratio of mortality was up to May 31st.—Lord STANLEY replied to the question, saying: The number of sick admitted to hospital between April 4th and 27th, 1900, was 94. It is not possible to differentiate the cases of enteric fever from the information at the disposal of the War Office, but up to May 31st there were 15 deaths from enteric fever.

Treatment of Tuberculous Carcasses.

Mr. FIELD asked the President of the Local Government Board whether he was aware that the late medical officer of health of the City of London stated in his annual report to the Corporation, 1900, that he would condemn all carcasses affected by localised tuberculosis; and, in view of the statement of the Royal Commission on Tuberculosis that such meat might be eaten with impunity, and seeing that the late medical officer of health of the City of London was paid part of his salary by the Local Government Board, would he state what steps the Board would take.—Mr. WALTER LONG said: I am aware of the statements made on this subject by the late medical officer of health of the City of London in his report for 1899, but I am not responsible for the views which he entertained. I may add that no part of his salary was paid by the Local Government Board.

Educational Appointment for Dr. Henry Ward Irvine.

On the motion for the adjournment of the House for the Whitsuntide vacation,

Mr. MCKENNA called attention to the appointment of Dr. Henry Ward Irvine as one of His Majesty's inspectors of schools. He gave to the House an account of the proceedings before the General Medical Council when Dr. Irvine was charged with unprofessional conduct in connexion with an institution in Birmingham and the Council found the charge proved and suspended further proceedings in the case for six months, and explained that since then Dr. Irvine had withdrawn from the institution and accepted this appointment. The hon. Member submitted that Dr. Irvine should not have received the appointment whilst a charge of this kind was hanging over him. He had no wish to mention the names of the persons who were interested in this gentleman.

Mr. CHAMBERLAIN said that as the whole speech was an insinuation he thought the hon. Member had better mention names.

Mr. MCKENNA said he was surprised to find the right hon. gentleman so sensitive—he who had not hesitated to call those opposed to him traitors, pro-Boers, and Little Englanders. However, if he wanted the names he would say that the first witness called in defence of Dr. Irvine was Mr. W. Cook, J.P., Alderman of the City of Birmingham and chairman of the Hospital Saturday Fund in Birmingham.

Mr. CHAMBERLAIN: And chairman of the Liberal Association.

Mr. MCKENNA said that this information was not given in the report of what took place. The next witness was the honorary secretary of the institution, and the next Mr. Arthur Chamberlain, J.P. Perhaps the Vice-President of the Council would be able to explain to the House who it was that recommended this gentleman to be an inspector of schools.

Mr. CHAMBERLAIN complained that the hon. Member had given him no notice of this attack, but he happened to know something of the subject matter and he would state the facts to the House. He had never seen Dr. Irvine and knew nothing about him except that he had been appointed an inspector of schools. He had never recommended or suggested him for the appointment, and, indeed, had never even heard of his name until the hon. Member introduced it. It was unfortunate that Members below the gangway could not attack him without attacking other people. He did not mind these attacks, but he thought it was a distinct abuse of the privileges of the House to bring in the names of people who were in no way connected with the Colonial Secretary. The hon. Member had represented that Dr. Irvine was under a ban, that his character was under the consideration of the General Medical Council. As a matter of fact, the only charge against this gentleman was that of having infringed what he might call a trade-union rule of the medical profession. There was absolutely nothing against his private character. Certain gentlemen in Birmingham, among them his brother, Mr. Arthur Chamberlain, devised a new charity in Birmingham to secure for the working classes of the city the advantages of consultation with eminent practitioners which they could not have under existing circumstances without payment beyond their means. The object was to secure a gentleman of high professional reputation. Dr. Irvine was chosen as the first of these practitioners, and the moment he was chosen the greatest possible objection was taken on behalf of the medical profession in Birmingham. He did not wish to go into the matter in detail, but it must be evident to the House that the appointment of a gentleman to a position of this kind might have the effect of injuring the business of other private practitioners, and it was not unnatural that complaint should be made. The complaint was carried to the General Medical Council who, he understood, gave as their decision that if Dr. Irvine did not retire from the position they would strike his name off the Medical Register. Dr. Irvine, for good reasons no doubt, thought it his duty to bow to the decision of the Council and he gave notice to the charitable institution that he would be unable to continue his services to it. He believed that the institution had already appointed, or intended to appoint, another gentleman of professional eminence and he hoped it would find some one who would carry out the eminently beneficial objects which its promoters had in view. That was the whole story. It was in connexion with a story like this, a story of a charity in which men of all classes and all politics in Birmingham were concerned, that the hon. Member got up and with an air of mystery tried to make the House believe that he had discovered a plot in which the Colonial Secretary was concerned.

Sir WALTER FOSTER explained to the House the duties and powers of the General Medical Council and in particular the circumstances in which the Council might declare a registered medical practitioner to have been guilty of "infamous conduct in a professional respect."

Mr. CHAMBERLAIN, interrupting the hon. Member, asked whether he considered taking lower fees than were usual constituted "infamous conduct."

Sir WALTER FOSTER replied that he was merely quoting the words of the Medical Act and that it did not lie with him but with the General Medical Council to define what they meant. In this case the Council had found the charge proved and they might proceed to erase the name from the Register. Dr. Irvine had, as it were, been remanded for six months in order that he might have an opportunity of considering his position. They had here the decision of a judicial body so high that no judge of the land had ever ventured to question its decisions. On the contrary, the courts had always held that the Council were the only body competent to decide what was "infamous conduct in a professional respect." He submitted on purely public grounds that no person in such a position as this doctor, awaiting the judgment of the General Medical Council on a charge on which he had been found guilty, ought to have been appointed to a high public office, especially as the body which made the appointment, the Privy Council, was the body under which the General Medical Council worked.

Sir JOHN GORST said that Dr. Irvine had been selected from a large number of candidates for an inspectorship of schools by the Lord President of the Council as the man from his very exceptional qualifications best fitted for the office. He held a very distinguished degree of Trinity College, Dublin, and not being a man of great means he had supported himself before and after he had taken his medical degree by acting as a teacher and master in several secondary schools in Ireland. At the time the appointment was made the Lord President and he had not heard of this charge against Dr. Irvine.

Sir WALTER FOSTER pointed out that the Privy Council received the minutes of the General Medical Council.

Sir JOHN GORST said that neither the Lord President nor he had sufficient leisure to peruse the proceedings of the General Medical Council, but even if the matters alleged in the course of this debate had been brought to the notice of the Board of Education they would have seen in them no reason whatever for reconsidering their decision.

FRIDAY, MAY 24TH.

The Standard for Milk.

Mr. HANBURY, on being questioned with regard to this subject by Mr. LAMBERT, said that he was very anxious that there should be the fullest criticism of the report of the Committee before the standard was fixed, but he certainly hoped to have it fixed within a week after the close of the Whitsuntide Recess.

Scottish Health Bill.

On the motion of the LORD ADVOCATE a Bill was introduced and read a first time to amend the law in regard to the sewerage and drainage and water-supply of burghs in Scotland.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BARNES, A. S., M.B., B.Sc. Lond., has been appointed Junior House Physician to the National Hospital for the Paralysed and Epileptic, Queen-square, W.C.

BIRKBECK, L. H. C., B.A., M.B., B.Ch. Oxon., has been appointed Assistant House Physician at St. Thomas's Hospital.

BURFIELD, T., M.A., M.B., B.C. Camb., L.R.C.P. Lond., M.R.C.S. Eng., has had an extension of his appointment as House Surgeon at St. Thomas's Hospital.

DRYLAND, J. W., M.R.C.S. Eng., L.S.A., has been re-appointed Medical Officer to the Kettering Joint Hospital Board.

DUDGEON, L. S., L.R.C.P. Lond., M.R.C.S. Eng., has had an extension of his appointment as Clinical Assistant in the Electrical Department at St. Thomas's Hospital.

EDWARDS, T. H., L.R.C.P. Lond., M.R.C.S. Eng., has had an extension of his appointment as House Surgeon at St. Thomas's Hospital.

EVELYN, W. A., M.A., M.D. Cantab., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Third Honorary Medical Officer of the York County Hospital.

FOX, R. A., M.B., C.M. Edin., has been appointed Senior Medical Officer at the Coast Hospital, Little Bay, New South Wales.

GOSTLING, G. W., M.B. Lond., L.S.A., has been appointed Fourth Surgical Officer of the York County Hospital.

GRIMWADE, A. S., L.R.C.P. Lond., M.R.C.S. Eng., has had an extension of his appointment as Assistant House Surgeon at St. Thomas's Hospital.

HARRIS, A. W., M.R.C.S. Eng., L.S.A., D.P.H. Eng. Conj., has been appointed Medical Officer and Analyst to the Metropolitan Borough of Lewisham.

HARWOOD, H. M., M.A., M.B., B.C. Cantab., has been appointed Clinical Assistant in the Departments of Diseases of the Throat and Diseases of the Ear at St. Thomas's Hospital.

HAYMAN, F. D., M.R.C.S. Eng., has been appointed Officer of Health of Ararat, Victoria.

HODSON, V. S., B.A., M.B., B.Ch. Oxon, has been appointed Assistant House Physician at St. Thomas's Hospital.

HUNT, S., L.R.C.P. Lond., M.R.C.S. Eng., has had an extension of his appointment as Assistant House Surgeon at St. Thomas's Hospital.

LOCK, J. L., B.A., M.B., B.C. Cantab., M.R.C.P. Lond., M.R.C.S. Eng., has been appointed House Physician to St. Thomas's Hospital.

LOTZ, H. J., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Member of the Medical Board, Western Australia.

MARTIN, A. E., M.A., M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

MENCH, W. C., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Clinical Assistant in the Department of Diseases of the Skin at St. Thomas's Hospital.

MENNELL, Z., L.R.C.P. Lond., M.R.C.S. Eng., has had an extension of his appointment as House Physician at St. Thomas's Hospital.

MILLARD, C. KILLICK, M.D., D.Sc. Edin., has been appointed Medical Officer of Health and Public Analyst for the Borough of Leicester, vice H. G. H. Monk, resigned.

MILLER, T. D., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Clinical Assistant in the Department for Diseases of the Skin in St. Thomas's Hospital.

NITCH, C. A. R., M.B. Lond., L.R.C.P. Lond., M.R.C.S. Eng., has had an extension of his appointment as Assistant House Surgeon at St. Thomas's Hospital.

PARKER, HERBERT GEORGE, F.R.C.S., L.R.C.P. Edin., has been appointed Honorary Ophthalmic Surgeon to the Bolton Infirmary and Dispensary, vice A. Emrys Jones, resigned.

PATERSON, H. J., M.A., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Surgeon to the London Temperance Hospital.

SAWYER, J. E. H., M.A., M.B., B.Ch. Oxon., has been appointed House Physician at St. Thomas's Hospital.

SHORROCK, J. I., L.D.S. R.C.S. Eng., has been appointed Dentist to the Blackburn Cottage Homes.

SHUTTLEWORTH, G. R., M.D. Heidel., M.R.C.S. Eng., has been appointed Visiting Medical Expert to the Isolation Hospital at Darenth Asylum.

SINGER, H. D., M.D. Lond., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Senior House Physician to the National Hospital for the Paralysed and Epileptic, Queen-square, W.C.

SKERRETT, F. B., B.Sc. Lond., L.R.C.P. Lond., M.R.C.S. Eng., has had an extension of his appointment as House Physician at St. Thomas's Hospital.

SMALL, R., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Clinical Assistant in the X Ray Department at St. Thomas's Hospital.

SPENCER, WALKER, L.R.C.P., L.R.C.S. Edin., has been appointed Poor-Law Medical Officer and Public Vaccinator of Bolsover.

STANNUS, H. S., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

STEVENS, A. E., M.B. Durh., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Clinical Assistant in the Department for Diseases of the Throat at St. Thomas's Hospital.

TAYLOR, T. S., M.A., M.B., B.C. Camb., has had an extension of his appointment as House Surgeon at St. Thomas's Hospital.

WILLIS, W. M., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon at the General Hospital, Nottingham.

WILLS, B. S., L.R.C.P. Lond., M.R.C.S. Eng., has had an extension of his appointment as House Surgeon at. Thomas's Hospital.

WOODS, W. H. O., B.A., M.B., B.C. Camb., has had an extension of his appointment as Assistant House Surgeon at St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHANTI, WEST AFRICA.—Medical Officer, with previous tropical experience.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with board and lodging.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, single. Salary £100 per annum, with board and residence.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £80, with board and lodgings.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £150 for the first year and £170 for the second, with furnished rooms, coal, and gas.

CHELTENHAM GENERAL HOSPITAL.—Junior House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

CHESTER GENERAL INFIRMARY.—House Surgeon.

CHORLTON-UPON-MEDLOCK DISPENSARY, Manchester.—Resident House Surgeon, unmarried. Salary £130 per annum with furnished rooms and attendance.

COUNTY ASYLUM, Carmarthen.—Junior Assistant Medical Officer, unmarried. Salary £130, advancing £10 yearly to £150, with furnished apartments, board, washing, and attendance, without stimulants.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £25 per annum, with board and washing.

GOLD COAST.—Government Medical Officers, unmarried. Salary £400 a year, free passages, and allowances.

GRAHAMSTOWN ASYLUM AND CHRONIC SICK HOSPITAL, South Africa.—Assistant Medical Officer. Salary £250 per annum, with board and quarters. Free passage.

HAILEY OPEN-AIR SANATORIUM, Ipsden, Wallingford.—Resident Medical Officer. Salary at the rate of £100 per annum, rising to £150 after six months and £200 after first year.

HOSPITAL FOR SICK CHILDREN, Newcastle-on-Tyne.—Resident Medical Officer. Salary £60, with board, lodging, and laundry.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £60, with board and lodging.

INDIAN MINING ASSOCIATION, Bengal.—Assistant Medical Officer, unmarried. Salary Rs.300 per mensem, with free house and horse and travelling allowance.

ISLE OF WIGHT COUNTY ASYLUM, near Newport.—Assistant Medical Officer, unmarried. Salary £150 per annum, with furnished apartments, board (exclusive of alcoholic drinks), attendance, and washing.

JARROW MEMORIAL HOSPITAL.—House Surgeon, unmarried.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 a year, with board and lodging.

LIVERPOOL STANLEY HOSPITAL.—Honorary Physician.

LONDON HOSPITAL MEDICAL COLLEGE.—Instructor of Anæsthetics and two Assistants.

METROPOLITAN ASYLUMS BOARD.—Six Assistant Medical Officers (unmarried) at the Fever and Small-pox Hospitals. Salary £160 first year, £180 the second, and £200 the third and subsequent years, with board, lodging, attendance, and washing.

NEWTON ABBOT UNION.—Medical Officer and Public Vaccinator. Salary as Medical Officer £30 per annum, with 10s. 6d. for Midwifery; as Public Vaccinator by fees.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—House Surgeon for six months. Salary at rate of £30 per annum, with board, residence, and laundry.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary £200 per annum, increasing by £15 every year. Also two Assistant Resident Surgeons. Salaries £160 per annum each, increasing by £10 every year, furnished apartments, attendance, light, and fuel. Unmarried.

PARISH OF LAMBETH.—District Medical Officer. Salary £70 per annum and fees.

QUEEN'S HOSPITAL, Birmingham.—House Surgeon for 14 months. Salary at the rate of £50 per annum, with board, lodging, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, &c.

ROYAL BERKS HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100, increasing by £10 a year, with board (excluding stimulants) and apartments.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Junior Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, lodging, and washing.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—Assistant House Surgeon. Salary £50 with board, residence, and washing.

SETTLEMENT OF WOMEN WORKERS, Canning Town.—Senior Resident Medical Officer (female). Salary £100, with board and residence. Also Qualified Assistant. Board and residence only.

SOCIETY OF APOTHECARIES OF LONDON.—Examiner in Medicine; also Examiner in Midwifery.

ST. MUNGO'S COLLEGE, Glasgow.—Professorship of Medicine.

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SWANSEA UNION.—Medical Officer and Public Vaccinator. Salary and fees £450 per annum. Also Assistant Medical Officer. Salary £200 per annum.

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UNIVERSITY COLLEGE, London.—Surgical Registrar.

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WESTERN GENERAL DISPENSARY, Marylebone-road.—Second House Surgeon, unmarried. Salary £75 a year, with board and residence, and 10s. a month for laundry.

Births, Marriages, and Deaths.

BIRTHS.

MORRISON.—On May 24th, at Brighton-road, South Croydon, the wife of Alexander Morrison, M.R.C.S., L.R.C.P., of a daughter.

WELLBY.—On May 29th, at 27th, St. Julian's Farm-road, West Norwood, S.E., the wife of Stanley Wellby, M.B. Oxon, of a daughter.

WOODMAN.—On May 27th, at New-road, Rochester, the wife of William James Woodman, M.R.C.S., &c., of a son.

MARRIAGE.

WATSON—GREEN.—On May 13th, at Algiers, first at the British Consulate and afterwards at the Church of the Holy Trinity, George Samuel Watson, M.R.C.S., of Tunbridge Wells, to Edith Sarah Green, of The Limes, Hurstpierpoint.

DEATHS.

MACLEROY.—On May 19th, at Oakford House, King's Teignton, South Devon, Arthur Lloyd MacLeroy, M.A. Oxon., L.S.A., L.A.H. Dub., in his 48th year.

SKIMMING.—On May 23rd, Robert Skimming, M.D., F.R.C.S. Ed., of Tudor Lodge, East Molesey, aged 58.

WATKINS.—On May 20th, Robert Webb Watkins, F.R.C.S., J.P., of Towcester, aged 76.

WILLIAMS.—On May 21st, at 20, Windsor-place, Cardiff, John D. Williams, M.D., aged 36 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

APHASIA OF HYSTERICAL ORIGIN.

APHASIA of hysterical origin is rare, though phenomena of an allied nature, such as aphonia and mutism of varying degrees, are not uncommon in hysteria. Dr. Georges Guillain of Paris has published in the *Revue Neurologique* of April 30th a case of hysterical aphasia occurring in a man and showing several features of interest. The patient was a workman of temperate habits, free from syphilis, and in the enjoyment of good health. In 1897 he heard of the death of his brother, which so prostrated him that he was obliged to take to his bed, after which he found himself incapable of walking for a period of 15 days. He then got well and was able to resume his work. Two years after he received bad tidings concerning a nephew. He had a violent altercation with his sister about this, and went to bed angry and excited, waking next morning with a violent headache and finding that he had lost power over his legs so that he could not walk. This condition had lasted for two months when he was admitted to hospital in March, 1900, and on examination he was found to present a slight hemiplegia of the right side of the body and complete aphemia (glosso-kinæsthetic aphasia of Bastian). His mind was clear throughout the present illness and his wife asserted that he never had lost consciousness or suffered from coma during the illness. For six weeks after admission there was paralysis of the rectal and vesical sphincters. He could not well understand what was said to him. There was no dysphagia. He gradually improved after a few weeks' stay in a hospital and after six months he was able to walk. He could not move his tongue when asked to, but could give either hand or both hands when requested. But when asked to lower the hand he proffered the other hand, when asked to open the hand he opened his mouth, asked to close the hand he made no response, asked to place his left hand on his head he placed the right hand on the chin, and when told this was wrong he placed the left hand on the chin. Hearing was good. He could utter the words "Yes" and "No" and a few uncouth sounds of one or two syllables, but of no significance. He could not repeat words uttered in his presence or sing. He was ignorant of reading and writing and therefore could not be tested for knowledge of printed words. On being shown a picture of a horse and a bottle he nodded recognition when the correct name was given to each of these in his presence, but he turned away in disgust when the picture of a boat or of a house was shown. On being shown a clock and asked the time his reply showed that he confounded the hour and minute hands. Shown a rhinoceros carved in wood he admitted it was not a lion or a bear, but said "Yes" when asked if it was a rhinoceros. On examination it was found that the right hand and arm were cyanosed and cold, and the same applied to the right foot and leg. With the dynamometer the right grip registered 16 kilogrammes and the left 32 kilogrammes. There was no disturbance of sensibility, and the stereognostic sense was normal. The tendon-reflexes (knee-jerk, tendo-Achillis-jerk, and elbow-jerk) were exaggerated on the right side. Gait, at the termination of his stay in hospital, was normal. There were no signs of visceral or organic disease. Babinski's great-toe reflex was present, and this confirmed the diagnosis of hysterical hemiplegia and aphasia which was made. Light and colour perception was normal, and the general health was good. Dr. Guillain refers to cases of aphasia and word-deafness of hysterical origin recorded by Raymond, aphemia of similar origin recorded by Janet and Bernheim, and agraphia of hysterical origin recorded by Charcot, Déjerine, and others, which have interesting analogies with the present case.

KELENE.

To the Editors of THE LANCET.

SIRS,—I shall feel grateful to any of your medical or dental readers if they will give me their experience of the usefulness of kelene as a general anæsthetic when administered by means of a suitable face-piece. I am a country practitioner with no assistance and therefore fight shy of chloroform as much as possible. How long can a patient with safety be kept under kelene? I understand narcosis is produced as quickly as with nitrous oxide.

I am, Sirs, yours faithfully,

May 28th, 1901. M. W. D.

"PLACE OF RESIDENCE FOR A RETIRED SURGEON."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 30th, p. 987, "P. P.," a retired surgeon, asked for information as to a good residence to which to retire and was advised, I think, to try Branksome, near Bournemouth. With regard to the last-named I have been there twice on account of my health, once when it was so wet and cold that I was obliged to leave and once when it was so wet and hot that I was likewise obliged to make my exit. May I suggest the suburbs of some good city, such as Worcester, as a trial. Malvern (within eight miles), and especially West Malvern (about 1000 feet above sea level), are worth knowing. At the latter there is excellent accommodation at the Westminster Arms, kept by Mr. Martin, as well known in America as in England I am told. Dr. Charteris in the chief work on health resorts states, I remember that he knows no place better than Malvern to recuperate jaded health in certain states. Were it not for the fact that the local authorities are in a somnolent condition, that scotch was not burning all day in private gardens, and that the public gardens were not closed during half of the year, I believe it would be one of the most favoured places in England.

I am, Sirs, yours faithfully,

Worcester, May 21st, 1901. W. WOODWARD, M.D. St. And.

SUGGESTIONS WANTED.

To the Editors of THE LANCET.

SIRS,—I am a medical man, aged 34 years, married, a very moderate drinker, an athlete, and in extremely good muscular condition and well developed in every respect, yet the curse of my life is hyperidrosis, the very slightest exertion causing me to sweat most profusely. I have limited my fluid to six ounces per day for days on end without any benefit. I have given every drug in the British Pharmacopœia a fair trial without benefit. What is it, and what can I do? I am an open exponent of any theory existant, and would be eternally grateful for any suggestions which would bring me relief.

I am, Sirs, yours faithfully,

May 28th, 1901. VELDT.

HEPATIC ENLARGEMENT IN TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—Can any of your readers refer me to literature bearing upon hepatic enlargement in typhoid fever?

I am, Sirs, yours faithfully,

May 27th, 1901. D. A. A.

THE PREVALENCE OF RESPIRATORY DISEASES NEAR THE METROPOLIS.

To the Editors of THE LANCET.

SIRS,—I am unable to lay my hands on the Registrar-General's reports which some of your readers probably have at their fingers' ends. Could some one kindly inform me of the various districts round London within a nominal hour's journey where respiratory diseases are least prevalent? What I want to know especially is the best place or places for a patient to live in who suffers from bronchitis every winter.

I am, Sirs, yours faithfully,

May 28th, 1901. X. Y. Z.

General Practitioner would be glad to receive advice as to the best method of treating asthma which comes on in the early hours of the morning—from 2 to 5 A.M.—in connexion with gouty nephritis in a man, aged 65 years. There is marked albuminuria with casts, the heart is weak and irregular, and there is a little œdema of the legs.

Mr. H. Smith.—We have noticed the Progressive Medical Alliance in properly abusive terms on several occasions, but the "experts and specialists" who do the work of the Alliance are not really medical men and women and cannot be removed from a Register on which they have no place.

C. W. W.—The institution in question is founded for the practice of mischievous quackery. It is astonishing that respectable newspapers can be found to insert such advertisements.

Hampshire.—Six shillings is a fair price. The essential point is that all the medical men in the neighbourhood should be absolutely agreed upon the point.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 30th, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
May 24	30·28	N.E.	...	117	71	47	52	60	Fine
,, 25	30·15	N.E.	...	115	70	49	54	60	Fine
,, 26	30·02	N.	...	85	63	54	52	56	Overcast
,, 27	29·87	W.	...	120	74	51	53	62	Fine
,, 28	29·93	S.W.	...	109	77	53	57	64	Fine
,, 29	29·80	S.	...	127	81	59	60	60	Hazy
,, 30	29·70	S.W.	...	110	69	61	60	65	Cloudy

During the week marked copies of the following newspapers have been received:—*Mining Journal, Leeds Mercury, Local Government Journal, Windsor and Eton Express, Vancouver Daily Province, City Press, Liverpool Daily Post, Reading Mercury, Yorkshire Post, Hertfordshire Mercury, Cornish Echo, Shanklin Gazette, Weekly Free Press (Aberdeen), Sunday Special, Lancaster Guardian,* &c., &c.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (8th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (5th).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. Galabin, Dr. Donald (for Dr. Fothergill), Dr. H. R. Andrews, and Mr. S. Boyd (introduced by Dr. A. Routh). Paper:—Dr. Donald: Fibroid Tumours complicating Pregnancy and Labour.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. S. Edwards: Affections of the Prostate.

TUESDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Ewart: Consultation. (Medical.)

WEDNESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. E. W. Roughton: Consultation. (Surgical.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Horton-Smith: Aortic Aneurysm.

THURSDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. C. B. Keetley: Hip Disease.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Murray: Medical Cases. (Post-Graduate Course.)

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Prof. Dewar: The Chemistry of Carbon.

FRIDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Tilley: Consultation. (Throat.)

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

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